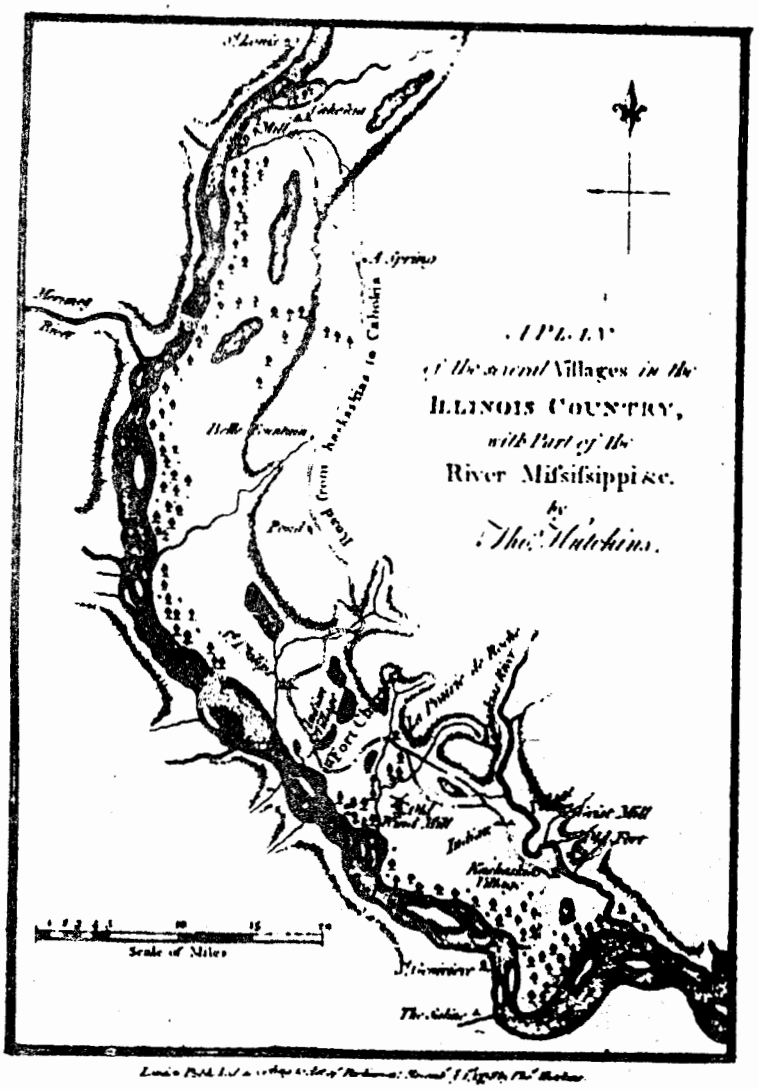

GREAT III

CULTURAL RESOURCE INVENTORY

VOLUME I

ENVIRONMENTAL RESEARCH CENTER OF MISSOURI, INC.

MAY 1982

GREAT III
CULTURAL RESOURCE RECORD/LITERATURE PROJECT

Prepared for the
U. S. Army Corps of Engineers
St. Louis District
Contract Number DACW43-80-C-0152

Prepared by
Environmental Research Center of Missouri, Inc.
Jefferson City, Missouri
May 1982

Craig Sturdevant
Principal Investigator

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A120782
3. RECIPIENT'S CATALOG NUMBER	
4. TITLE (and Subtitle) GREAT III - Cultural Resource Inventory, Vol. 1	5. TYPE OF REPORT & PERIOD COVERED Final
	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Craig Sturdevant	8. CONTRACT OR GRANT NUMBER(s) DACW 43-80-C-0152
9. PERFORMING ORGANIZATION NAME AND ADDRESS Environment Research Center of Missouri, Inc. 1524 Rosevalley Jefferson City, Missouri 65101	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Engineer District, St. Louis, LMSPD-F 210 Tucker Boulevard, North St. Louis, Missouri 63101	12. REPORT DATE May 1982
	13. NUMBER OF PAGES 218
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)	15. SECURITY CLASS. (of this report) Unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This Cultural Resource Inventory is presented in two parts: (1) Volume I Summary of Findings; and (2) Volume II Bibliography. In Volume I the methodological considerations involved in all processes of the investigation are discussed. The Corps Base Maps and computer record and programs are placed with the St. Louis District, Corps of Engineers, the Missouri Department of Natural Resources/Historic Preservation Program, and the Illinois Department of

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

Conservation/Division of Historic Sites, and are considered sensitive information. The major values of the GREAT III cultural resource inventory report documents are in their potential use as planning tools.

ABSTRACT

The GREAT III Cultural Resource Inventory is presented in the form of four separate documents: Volume 1 Summary of Findings, Volume II Bibliography, Corps Base Maps showing site locations and characteristics and areas which have been subject to intensive cultural resource survey, and a computer data file and programs. The following document (Volume I) presents a summary of the findings of the investigation. The methodological considerations involved in all processes of the investigation are discussed in the text and outlined in the appendices. The setting in which the GREAT III inventory takes place is discussed in terms of legal background, prehistoric setting, and historic setting. Results of the previously recorded site record review are incorporated in the background setting as well as in the summary of findings which follows. The summary of findings primarily involves presentation of the data generated from the mapping and computer application components of the study in table form. Recommendations for Corps of Engineers cultural resource compliance ends the main text. The appendices include listings, tables, definitions, site form examples, data sheets, computer programs, correspondence, reviews and responses, architectural resources, and other Scope of Work requirements.

Volume I and Volume II are to be reproduced for distribution to agencies and others involved in cultural resource management. The Corps Base Maps and computer record and programs are placed with the St. Louis District, Corps of Engineers, the Missouri Department of Natural Resources/Historic Preservation Program, and the Illinois Department of Conservation/Division of Historic Sites and are considered sensitive information.

The findings of the investigation are difficult to summarize given the variety of records involved in a study of this nature as well as the separation of documents which are the final product. Briefly, the GREAT III study area contains approximately 3,000 recorded cultural resource sites and districts. Known occupation of the area extends to at least 12,000 B.C. and all major cultural periods defined in the Midwest are present in varying degrees. The largest proportion of prehistoric sites recorded are located in Illinois. This is interpreted as a result of amount of intensive survey activity along with environmental factors. In terms of previously recorded sites, prehistoric occupation is better represented in the study area than historic occupation. Several recorded sites are located near the present Mississippi River channel and may be in danger of river impact. The hundreds of known steamboats sunk in the Mississippi are very poorly represented in the physical site record.

The major values of the four GREAT III cultural resource inventory report documents are in their potential use as initial planning tools. Base maps will suggest areas which are known to contain high site potential which would hopefully be avoided by projects that would treaten impact. The maps and computer file have suggested some interpretations of low site probability zones (i.e. historic river channels). The summary statements should be incorporated in interpretation involving high priority occupations.

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ACKNOWLEDGEMENTS

The investigators wish to thank the many persons involved in cultural resource preservation who helped in innumerable ways throughout the data recovery components of this study. In particular, the personnel of the Missouri Department of Natural Resources/Historic Preservation Program, Illinois Department of Conservation/Division of Historic Sites, Corps of Engineers St. Louis District, the Missouri State Historical Society, and the Illinois State Museum were extremely helpful in directing us to information sources and spent a great deal of time explaning procedures involved in agency data recovery, input, and retrieval systems. We would especially like to thank Dr. Jerome Jacobson of the Illinois State Museum and Leonard Blake for bibliographic information. During the course of this investigation we have probably received help and direction from over one hundred persons and it would be impossible to do appropriate justice in acknowledgements we owe in this brief space. Errors of omission and other types are, of course, the responsibility of the investigators.

LOCATIONS OF INVESTIGATION PRODUCTS

The investigation products include four separate items:

1. Volume 1 - Summary of the investigation findings.
2. Volume II - Bibliography.
3. Cultural resource locational and characteristics data on Corps of Engineers GREAT III Base Maps.
4. Computer file and programs.

Items 1 and 2 (Volumes I and II) have been printed in limited quantity and are available through the Corps of Engineers St. Louis District or the Missouri Department of Natural Resources/Historic Preservation Program. Item 3 (Corps Base Maps) is located in the Corps of Engineers St. Louis District Environmental Section, Missouri Department of Natural Resources/Historic Preservation Program Library and have been mailed to the Illinois Department of Conservation/Division of Historic Sites. The maps have also been photographed and full size clear overlays are on file at the St. Louis District. In addition, the base maps have been color microfilmed and copies located at the three above agencies. The computer data file and programs (Item 4) are entered on the Department of Natural Resources/Historic Preservation Program computer and at the St. Louis District, Corps of Engineers. The data cards and programs are available to the Illinois Department of Conservation/Division of Historic Sites. Items 3 and 4 (maps and computer materials) are considered sensitive information and are located only in the three agency repositories noted. Items 1 and 2 are for general distribution.

INTRODUCTION

In October 1980, the Corps of Engineers, St. Louis District, contracted with Environmental Research Center of Missouri, Inc. (ERC) to carry out the cultural resources inventory component of the Great River Resource Management Study (GREAT III). The historical development of the study is well summarized by the introductory statement of the GREAT III Reconnaissance Report (July 1980:1).:

> In recent years, organizations and individuals have expressed concern about the operation and maintenance of the inland waterway system of the Upper Mississippi River. In 1973, the State of Wisconsin initiated a lawsuit against the Corps' dredging practices in the St. Paul District. This action resulted in an announcement in September 1974 by the North Central Division Engineer of the Corps of Engineers and the North Central Regional Director of the U. S. Fish and Wildlife Service that they planned to establish a partnership team within the North Central Division area. This team would work out a long-range management strategy for the multi-purpose use of the river. This move led to the establishment of a broad-based federal-state task force. Previously, the Upper Mississippi River Basin Commission (UMRBD) had established a special Dredged Spoil Disposal Practices Committee to begin laying the groundwork for such a cooperative effort. This committee was composed of delegates representing the five principal river basin states and five federal agencies. Thus, what finally became known as the Great River Environmental Action Team (GREAT) was set up in October 1974 as a working partnership of federal agencies and states under the auspices of the UMRBD.
>
> GREAT I covers the reach of the Mississippi River between St. Paul and Minneapolis, Minnesota, and Guttenberg, Iowa (St. Paul District). GREAT II extends from Guttenberg to Saverton, Missouri (Rock Island District). GREAT III extends from Saverton, Missouri, to the confluence of the Mississippi with the Ohio River at Cairo, Illinois (St. Louis District), and will be referred to as the Great River Resource Management Study (See Figure 1).
>
> GREAT III was begun in the summer of 1977 as a result of the 1976 Water Resources Development Act (Public Law 94-587). The study area covers the Mississippi River and its floodplain from Saverton, Missouri, to Cairo, Illinois. This study will be an investigation of the total river resource management requirements, including, but not limited to, navigation, effects of increased barge traffic, fish and wildlife, recreation, watershed management, and water quality...The final report is presently scheduled to be completed by September 1984.

FIGURE 1

GREAT I, II AND III STUDY AREAS

Reproduced from GREAT II (1980:3).

The present investigation encompasses the initial cultural resource component of the GREAT III. The scope of work under which the project was carried out summarizes the general goals as follows:

1. Management of the identified cultural resources in all areas of the GREAT III reach is a formidable task due to the fragmentation of relevant data among repositories located at a number of institutions in Missouri and Illinois. This study will ensure the availability of cultural resources data for application to practical problems such as land use planning, appropriate mitigation planning, and for future scientific investigations. The study will also further the protection of the integrity of cultural resources for public education and appreciation.

2. In order to assist the various agencies and organizations in fulfilling their responsibilities under current federal legislation relative to cultural resources, the inventory and data base developed from this study will be designed to facilitate planning and coordination of activities so that cultural resources will be efficiently managed and development activities may proceed with little or no interruption. Therefore, the final product of this study will require the contractor to organize the data base and design a management procedure that will assist in evaluating project locations with respect to cultural resources.

3. The study area will include the main stem of the Mississippi River and its floodplain and bluffs from Saverton, Missouri, to Cairo, Illinois. This is to include bluff top areas extending from the bluff crest to an upland peripheral limit one mile away: regions of confluence with tributary streams and areas reported to have been intensively occupied or exploited during prehistoric and historic times within a peripheral limit of one mile above confluence (See Figure 2).

The project requirements consist of three major tasks: Task one is a review of cultural resource literature and cultural resource site forms pertaining to the study area.

Task two consists of assembly of the data recovered by Task one in the form of annotated bibliographic entries, a general cultural history of the area, and a computerized system for maintaining and updating recorded site information.

Task three includes compilation of site locations and areas surveyed for cultural resources. These data are to be placed on Corps Base Maps of the GREAT III reach which are supplied by the Corps of Engineers, St. Louis District.

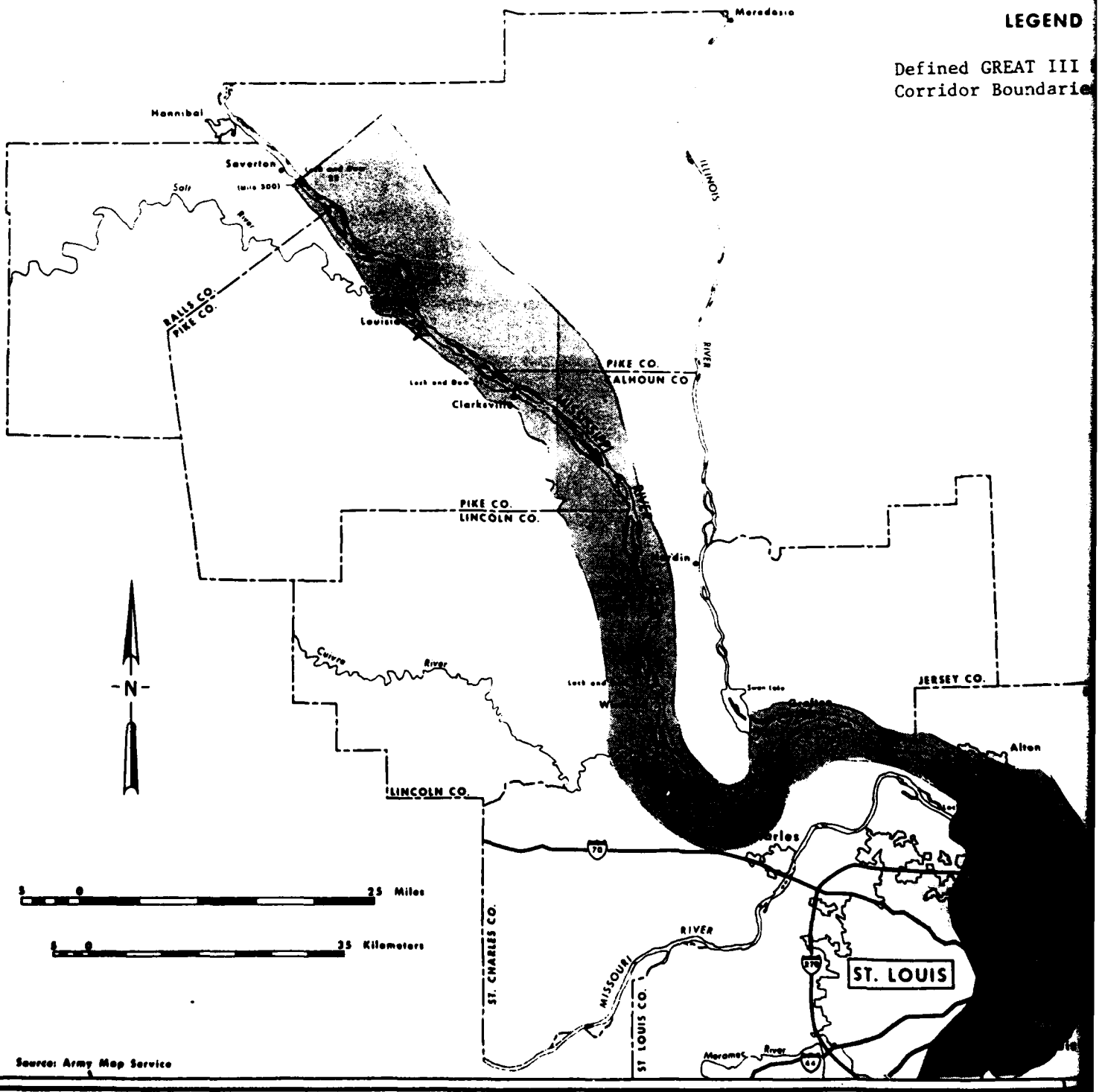
The final product thus includes a summary statement concerning GREAT III cultural resources, an annotated bibliography pertaining to cultural resources in the study area, a set of maps showing locations of previously recorded cultural resources and survey areas, and a computer file of previously recorded cultural resources and programs for input and retrieval.

FIGURE 2

UPPER MISSISSIPPI RIVER

GREAT III

Study Area



GURE 2

SISSIPPI RIVER

GREAT III

tudy Area

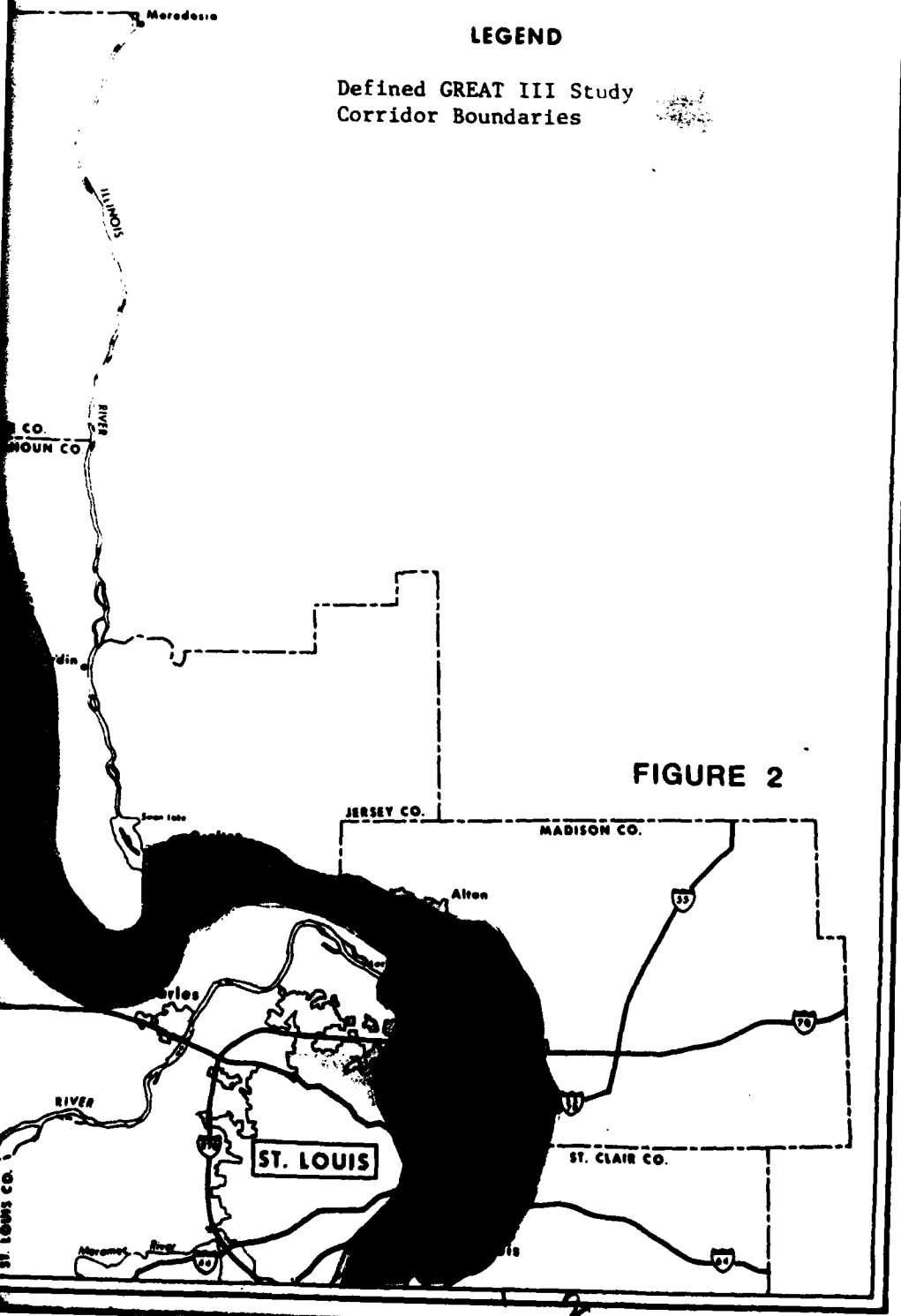


FIGURE 2

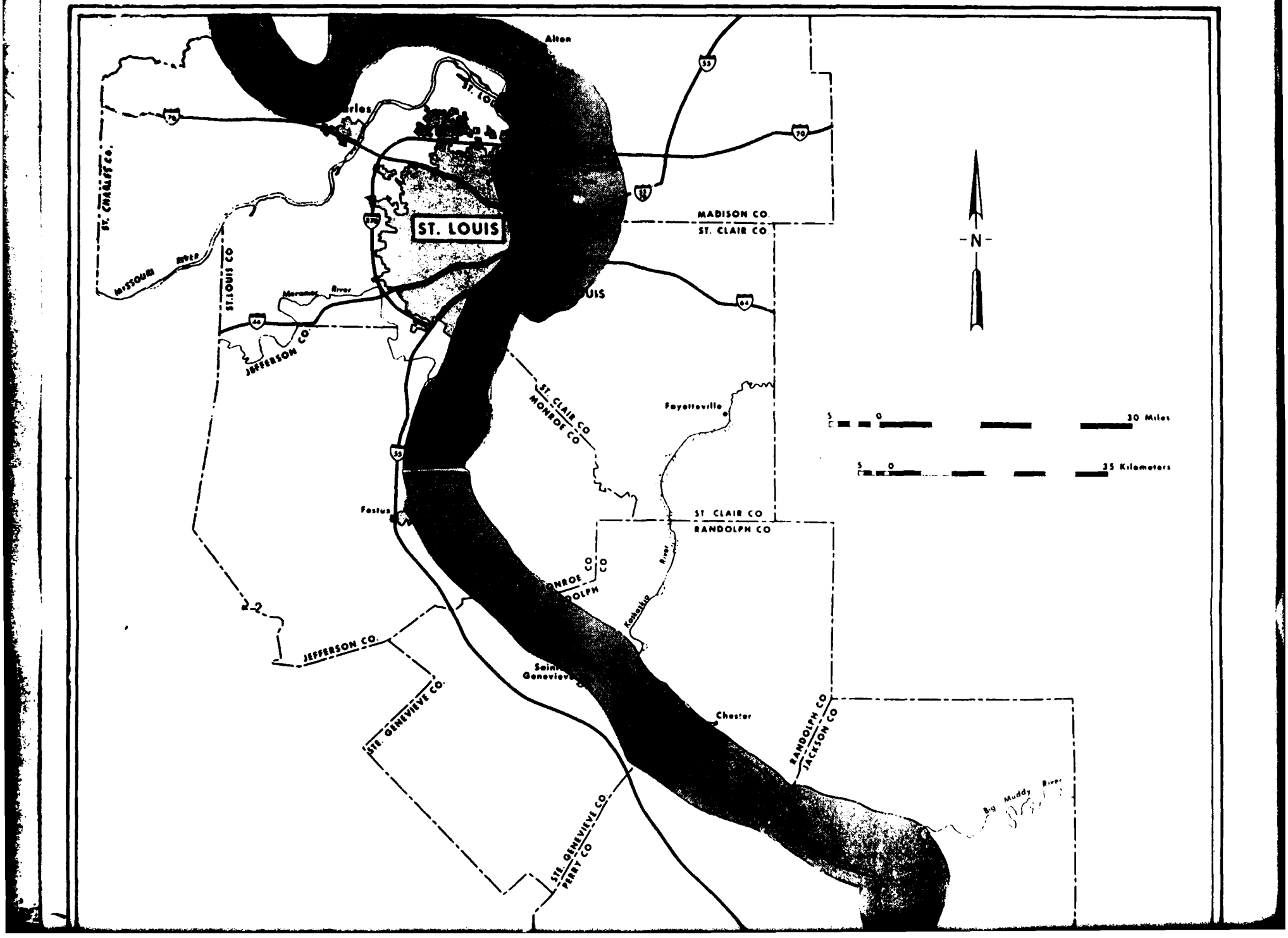
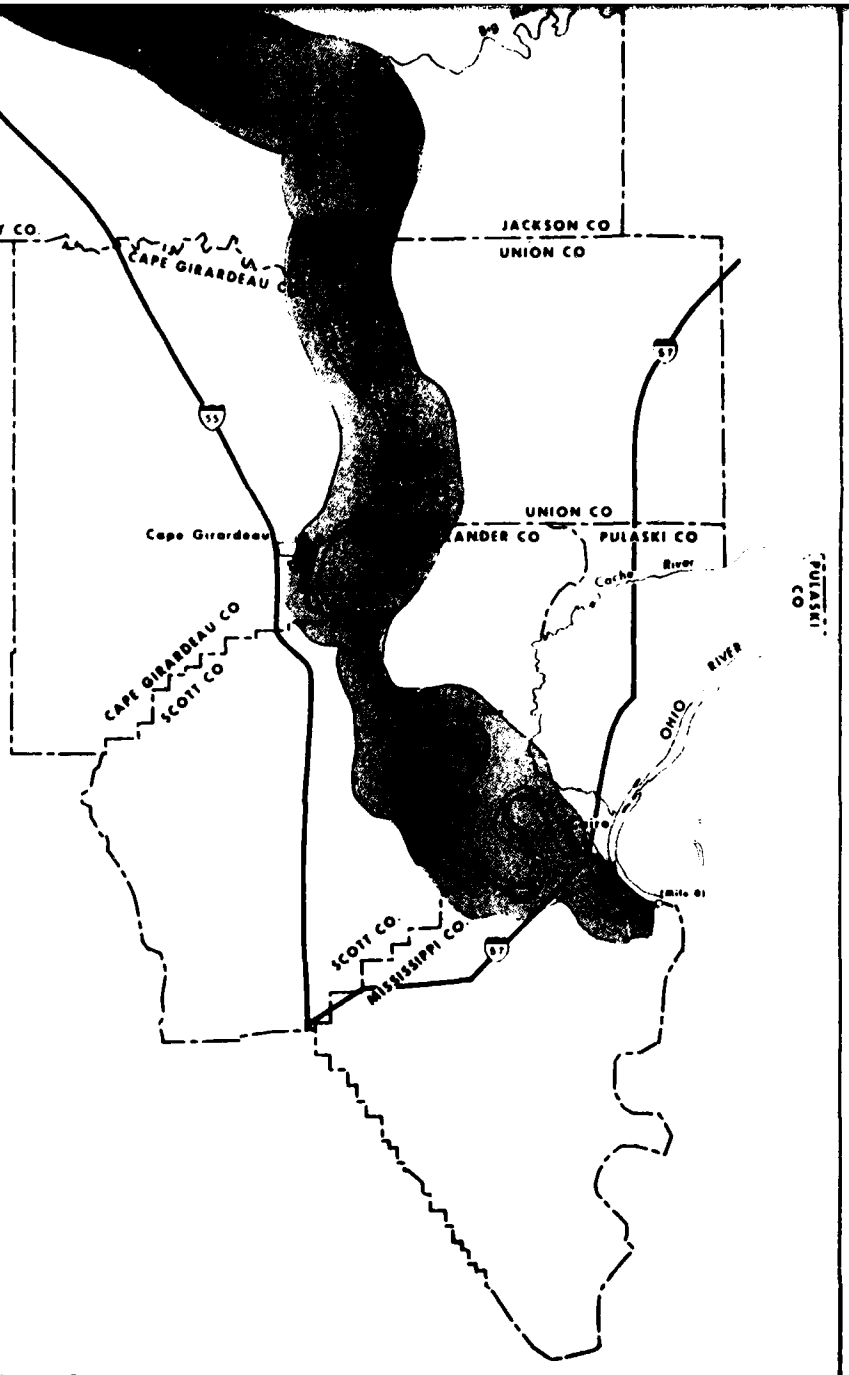

Alton
ST. LOUIS
MADISON CO.
ST. CLAIR CO.
ST. CHARLES CO.
ST. LOUIS CO.
Missouri River
Meramec River
JEFFERSON CO.
ST. CLAIR CO.
MONROE CO.
Fayetteville
Festus
ST. CLAIR CO.
RANDOLPH CO.
JEFFERSON CO.
STE. GENEVIEVE CO.
Chester
RANDOLPH CO.
JACKSON CO.
Big Muddy River
PERRY CO.
N
30 Miles
35 Kilometers

FIGURE 2 CONTINUED

MIDDLE MISSISSIPPI RIVER

GREAT III

Study Area



Great River Resource Management Study Area

GREAT III

1978

Source: Army Map Service

The work on the GREAT III cultural resources inventory has been carried out over a 19 month period with two official time extensions. All site records avilable to the investigators have been entered on Corps Base Maps and computer file. All cultural resource management (CRM) reports that could be observed have been reviewed and pertinent information has been listed in the bibliography and on Base Map index. The literature review has been somewhat selective in that it focused on works that are available to the widest audiences and located in major historical societies, university libraries, and state and federal agencies.

The completed investigation report consists of four separate items: Volume I is a summary report which includes a discussion of the laws effecting cultural resource management, a detailed account of the methods incorporated in all phases of the investigation, a general cultural history background statement, a summary of findings relevant to the GREAT III study area, and recommendations concerning cultural resources located in the GREAT III corridor. Volume II contains the bibliography of cultural resource references. The third item consists of a set of Corps Base Maps showing exact locations of cultural resources defined and plotted from available previously recorded site forms. The fourth item is the computer file containing individual site information throughout the GREAT III corridor and a set of programs which allow data input and retrieval. Volume I and Volume II will be circulated by the Corps of Engineers, St. Louis District for cultural resource management purposes and are not considered sensitive information. The Base Maps and computer file and programs are housed at the Corps of Engineers, St. Louis District, Missouri Department of Natural Resources/Historic Preservation Program, and the Illinois Department of Conservation/ Division of Historic Sites and will not be subject to general distribution.

The investigation was initiated in Missouri given the location of ERC in Jefferson City, Missouri. Preliminary data summary forms, computer options, mapping techniques, CRM review considerations, etc. were developed and reviewed by Work Group members, peers, and/or the Work Group leader during the first three months of the project. Forms utilized during the investigation as well as methods involved in data collection were finalized following this development and review period. The tasks were completed for the Missouri portion of the project during the spring of 1981. At this time the operations were moved to Illinois and the procedures developed during the first period of the investigation carried out for the eastern portion of the study area. In general, the investigation has resulted in completion of the tasks. Some of the specific items listed within the scope of work have recieved more attention than others although all were addressed. The procedures had been well developed during the Missouri investigations involving previously recorded site information. Time allocation, however, had to be reorganized while incorporating the Illinois data since the investigators were not allowed specific site location information from the Illinois Archaeological Society (Personal Communication: C. Bareis, March 30, 1981). Information from the Illinois Archaeological Society (IAS) can only be released on a density basis no smaller than one square mile and "Since the density approach was utilized and was adequate for the GREAT II project, it should be entirely adequate for the GREAT III project" (Personal Communication: C. Bareis, March 30, 1981). This was, however, not the

type of data necessary for a study of the magnitude of GREAT III and additional methodological procedures were initiated including cross-checking of the Illinois Department of Conservation/Division of Historic Sites (DOC/DHS) site maps, site forms, site summaries, and CRM's within the various data storage systems of DOC/DHS and against institution specific site forms where IAS rules do not apply or through verification of DOC/DHS information by IAS institutions. During the early activity involving Illinois cultural resources a decided effort was initiated to counter the IAS secrecy policy and produce a set of exact site locational data for Illinois. The study recovered data for 100% of the recorded sites in Missouri (August 1981) and 100% review of CRM reports. The Illinois efforts resulted in recovery of an estimated 90 to 95% of the previously recorded sites and CRM report reviews (July 1981). The data omission for the Illinois side of the Mississippi is regretable in terms of the present project goals as well as frustrating for the investigators involved in an inventory of this nature. We believe, however, that the site maps reflect the most explicit and extensive recorded site locational data that can be assembled given current Illinois Archaeological Society policies.

METHOD OF INVESTIGATION

Introduction

The method of investigation was developed according to the dictates of the project scope of work. The three major tasks required mapping of recorded cultural resources and areas surveyed in the GREAT III corridor, development of an annotated cultural resources bibliography for the study area, particularly cultural resource management (CRM) reports, and a computerized system for organizing, updating, and listing cultural resources and their general characteristics that have been previously recorded in the study area.

Since the investigators' headquarters are located in Missouri, pilot studies attempting to develop efficient and effective data collection methods were based on Missouri data. The methodological procedures thus established resulted in a data recovery program that was applied to the Missouri component of the study area. Upon completion of a majority of the tasks in Missouri the investigation expanded to Illinois with the expectation that the established recovery procedure system would work, with minimum modifications, as it had in Missouri. It became obvious, however, that several differences exist between the two states in terms of cultural resource record maintenance philosophy and organization.

The major difference between Missouri and Illinois affecting the investigation stemmed from availability and consistency of archaeological site form information. The Archaeological Survey of Missouri (ASM), the only central site form repository in Missouri, allows qualified researchers to observe and transfer data from site forms for cultural resource management (CRM) projects. ASM is also the only Missouri organization that assigns site numbers. In addition, the Missouri Department of Natural Resources/Historic Preservation Program (DNR/HPP) requires that all sites be assigned ASM official designations before compliance review can be initiated. The end result is that Missouri has a centralized site form data base which is supported through DNR/HPP compliance requirements. This type of data base allows for the consistency necessary for an overview project of the scope of the GREAT III. The Illinois Archaeological Survey (IAS) is the central site form repository in Illinois. The IAS differs from the ASM in that site form information cannot be transferred in ways that indicate exact locations of recorded sites (Personal Communication: C. Bareis). The type of information which can be attained through IAS is only in the form of number of sites recorded within a square mile (Personal Communication: C. Bareis). An additional problem encountered when attempting to locate and plot all previously recorded sites in Illinois stems from the fact that not all organizations carrying out archaeological investigations in Illinois submit site forms to IAS. Although the Illinois Department of Conservation, Division of Historic Sites (DOC/DHS) prefers IAS site number designation, several CRM reports were observed which included only institution-specific field site numbers and no IAS designations. The net result for the present investigation was that additional procedures had to be incorporated in the Illinois data collection phase of the study.

The following section discussed the methodological steps involved in data collection, assembly, and organizationas developed and carried out during the GREAT III cultural resource overview project. Specific components of the investigative method are discussed under headings of bibliographic entries, site data summaries, CRM report review, mapping procedures, and computer system. With some exceptions, most of the forms developed and incorporated in the study are located in the appendices of Volume I of this report.

Bibliographic Entries

Collection of the historical bibliography for this study followed standard professional procedures. A preliminary search began with a survey of mongraphs on Illinois and Missouri history. These provided bibliographies which indicated the works most commonly consulted by practicing historians and the ways in which the cited works contribute to an understanding of each state's history. Further examination of regional studies on the Mississippi Valley and midwest produced additional sources and historical context.

The historical collections of the State Historical Society of Missouri, the Missouri Historical Society, and the Illinois State Library all added to the preparation of the bibliography. In each case, the library staff provided helpful guidance in the literature search. Final investigations into the available literature at those repositories entailed an examination of holdings listed in the prespective card catalogs under headings by town, county, and special subjects. University libraries which were consulted added little to the references gathered from the major historical societies in terms of specific project area bibliographic data. While the quantity of holdings in these institutions are in most instances much more extensive, local history data has been a specialized pre-occupation of the historical societies with the exceptions noted in the listing of repositories in the appendices.

Several local (city/county) historical societies were contacted and/or visited during the course of the investigation (See appendices). The range of information available varies extensively. As would be expected, records, literature, and other potentially useful forms of data in these repositories are generally county or city specific. The degree of indexing and cross-referencing also exhibits variation.

References found which pertained to the general study area were listed and observed for general annotation purposes. Where titles reflect the context of a reference, no further annotation was necessary.

Archaeological reference search for the study area was carried out in much the same manner as was the historical literature search. The Illinois search was, however, greatly enhanced through the availability of an annotated bibliography of Illinois archaeological references prepared by W. L. Brieschke (1970). Dr. Jacobson of the Illinois State Museum was also extremely helpful through the generous contribution of his on-going continuation and update of the Brieschke bibliography.

The results of the bibliography task are presented in Volume II of this report. A separate volume for the bibliography was decided upon because of length and suggestions from GREAT III work group members that the bibliography may be of use to a more varied audience than would the summary presented in Volume I and would prove more useful as a separate item.

Site Data Summaries

Some problems are encountered when attempting to utilize previously recorded archaeological site forms as a major component of a data base. The first major problem arises from the fact that site form style and the the attendent types of information requested on the forms has changed through the years since the initiation of central archaeological site form repositories. In Missouri four different form types were found recording site information in the study area. In Illinois different institutions and agencies have utilized their own forms which all vary as to quantity and type of data necessary for site form completion. A second problem, the result of recorder sophistication in terms of archaeological expertise, interest, geomorphological knowledge, and ability to interpret UTM and legal descriptions, adds to variation within the site form data base. A third problem, primarily encountered during the Illinois component of the study, stems from site form and site number proliferation. For example, in some instances site forms observed in the DOC/DHS files gave site number designations that referred to the same sites that were designated by different numbers in CRM reports and on DOC/DHS topographic quadrangles. In addition, some Illinois sites located in different areas were given the same site number. These problems are a result of lack of consistent centralization noted above. A final problem encountered whenever previously recorded site form information is dealt with is the inconsistent nature of the information supplied on site forms. Site forms only vary in terms of the amount and types of descriptions necessary to complete the form. In all site forms observed by the investigators during the present investigation as well as from other sources (cf. HCRS Publication No. 44 n.d.) certain information including site location and site description is required. Even though this basic data is required, persons submitting site forms quite often fail to include even basic information or simply submit data that are wrong.

The net result of the inconsistencies encountered in previously recorded site forms is an inconsistent data base. The problem for overviews such as the GREAT III which deal with this type of data base is how to construct a data retrieval and recording tool that is appropriate for records that vary from inclusion of almost no information to those which include a complete review and anlysis of controlled excavation data. The approach taken during the present investigation was to include as much data on the summary form as can generally be recovered during professional surface survey investigations. Although not a problem, the inclusiveness of the site form developed for the present study did produce a large number of "no response" entries for almost all of the previously recorded site forms.

The site summary form developed for the present study includes both prehistoric and historic/architectural categories (See Figure 3). Although both Illinois and Missouri have developed separate forms for architecture/historical sites and archaeological sites as well as separate numbering systems, there is increasing interest in considering all forms of cultural resources as one population for planning and inventory purposes. For inventory/planning strategies this approach is superior to separation of designation numbers and listings in that compliance requires assessment of all types of cultural resources. Combining these diverse types of phenomena allows for more efficient data recovery, particularly in initial planning stages. For instance, the ASM records are located in a facility at Columbia, Missouri while Missouri Historic Building Inventory forms are filed at DNR/HPP central files in Jefferson City. Preliminary record search would require two separate time consuming search procedures.

The major drawback to the combined form is in the degree of detail which can be included: separation of resources allows for more detailed description than is possible with a combined form unless a very cumbersome tool is desired. The efforts involved in the GREAT III form were directed toward maximizing both types of site information while minimizing the affect of too much data.

While data which some may believe pertinent have not been allowed for on the form, it is hoped that the final schedule will be interpreted as including sufficient data input for planning purposes as well as the potential for more complex data manipulation than the current Missouri and Illinois forms allow.

Construction of the form began with review of existing and proposed computerized cultural resource systems (cf. Maryland Site Survey, HCRS Draft System 1980). Since National Register of Historic Place eligibility criteria are of utmost importance in compliance projects, the proposed HCRS draft was drawn on extensively.

A preliminary form was constructed which was circulated to the GREAT III work group members and to other archaeologists, historians, and architectural historians for review and comment. As was expected, the archaeologists overwhelmingly suggested additional archaeological data input while the architectural historians suggested that it lacked architectural categories. Two further drafts were developed which attempted to address the areas that a majority of the reviewers agreed upon as deficient. The final form shown in Figure 3 expanded architectural data and made changes in archaeological and general information categories.

Prehistoric data which were not incorporated in the final form included the suggestions that Early, Middle and Late Woodland and Early and Middle Mississippian sequential data be more specific. There is agreement as to the general midwest sequence (cf. Chapman 1980, Munson 1971, Downer n.d.). Local sequence data, however, have proliferated and inclusion of all potential variants would create an awkward tool at best. In addition, the local/regional sequences are not always agreed upon by researchers and confusion as to chronological/cultural designation meanings could arise through inclusion of the diverse local

1 Entry # _____

2 Site # _____

3 Name _____

4 Township _____

5 Range _____

6 Section _____

7 ¼ Sec _____

8 Zone _____

9 UTM (N) _____

10 UTM (E) _____

11 Site size (meters)

___ X (meters) 1
___ Y 2
___ Not applicable 3

12 Time Period/Cult.

___ Early Man 1
___ Paleo-Indian 2
___ Dalton 3
___ Early Archaic 4
___ Middle Archaic 5
___ Late Archaic 6
___ Early Woodland 7
___ Middle Woodland 8
___ Late Woodland 9
___ Mississippian 10
___ 1400-1600 A.D. 11
___ 1600-1700 A.D. 12
___ 1700-1800 A.D. 13
___ 1800-1825 A.D. 14
___ 1825-1850 A.D. 15
___ 1850-1875 A.D. 16
___ 1875-1900 A.D. 17
___ 1900+ 18
___ [illegible] 19
___ [illegible] 20
___ Prehist-Unknown 21
___ Proto-His-Unk. 22
___ Historic-Unk. 23

13. Function

___ Prehis/Art 1
___ Prehis/Burial 2
___ Prehis/Ceremon. 3
___ Prehis/Fort 4
___ Prehis/Process'g 5
___ Prehis/Horticult. 6
___ Prehis/Kill-Butc. 7
___ Prehis/Quarry 8
___ Prehis/Camp 9
___ Prehis/Vil.-hab. 10
___ Prehis/Trans. 11
___ Prehis/Water comm 12
___ Prehis/Unknown 13
___ Hist/Military 14
___ Resid./single 15
___ Resid./multiple 16
___ Hist/Commercial 17
___ Hist/Museum 18
___ Hist/Theater 19
___ Hist/Education 20
___ Government Bldg. 21
___ Hist/Religion 22
___ Hist/Transport 23
___ Hist/Bridge 24
___ Hist/Mill 25
___ Hist/Industrial 26
___ Hist/Engin-struc 27
___ Hist/Park 28
___ Hist/Science-rec 29
___ Hist/Recreation 30
___ Hist/Landing 31
___ Hist/Subm vessel 32
___ Hist/Burial-cem. 33
___ Hist/Agricultural 34
___ Hist/Unknown 35

14 NRHP Status

___ On Reg.-District 1
___ On Reg.-Site 2
___ Nominated-pending 3
___ Determined eligib. 4
___ Potentially elig 5
___ Determined ineligib. 6
___ Recommend. ineligib 7

15. Nat. Landm. Status

___ On Nat. Lmk. 1
___ Not on/pending 2
___ Not on Nat. Lmk. 3

16. Site Status

___ Extant/prob. 1
___ Partial Ext./prob. 2
___ Nonextant/prob. 3
___ Good/Hist. 4
___ Fair/Hist. 5
___ Ruin/Hist. 6
___ Moved/Hist. 7
___ Original loc /Hist 8

17 Land Use-Current

___ Agricultural 1
___ Pasturage 2
___ Wooded 3
___ Developed 4
___ Transportation 5
___ Water control 6
___ Residence/agri. 7

18. Ownership

___ Corps owned 1
___ Other Fed. owned 2
___ State owned 3
___ Local Govt. owned 4
___ Private owner 5

19. Topography

___ Floodplain 1
___ Terrace remnant 2
___ Low rise/floodpl. 3
___ Old oxbow 4
___ Levee remnant 5
___ 1st Terrace 6
___ 2nd Terrace 7
___ 3rd Terrace 8
___ Terrace edge 9
___ Upland slope 10
___ Upland flats 11
___ Hill/ridgetop 12
___ Bluff top 13
___ Bluff slope 14
___ Toe slope 15
___ Ravine 16
___ Cave/rock shelter 17
___ Alluvial fan 18
___ Interfluve 19
___ Island 20

20. Archaeol Features

___ Earthwork/effigy 1
___ Earthwork/forcif. 2
___ Earthwork/burial 3
___ Midden 4
___ Pit/Hearth 5
___ Pit/refuse 6
___ Pit/cache 7
___ Pit/mine 8
___ Pit/borrow 9
___ Pit/unknown 10
___ Posts molds 11
___ Stone/fishweir 12
___ Stone/unknown 13
___ Stone/cairn 14
___ Art/pictograph 15
___ Art/petroglyph 16
___ Art/sculpture 17
___ Soil anom /burned 18
___ Mound ? 19

21. Site Contents

___ Ground/pech lith 1
___ Chipped lith tmp 2
___ Wooden tmp 3
___ Worked bone 4
___ Unworked bone (NH) 5
___ Worked antler/horn 6
___ Unworked ant /horn 7
___ Worked shell 8
___ Unworked shell 9
___ Teeth (NH) 10
___ Ceramics/prehist 11
___ Ceramics/historic 12
___ Metal/prehist 13
___ Metal/historic 14
___ Glass 15

Site Contents Cont'd:

___ Human remains 16
___ Vege./food-other 17
___ Lithic waste 18
___ Fire-crashed lith 19
___ Other lithic/pre 20
___ Other lith/hist. 21

22. Architecture Style

___ French Colonial 1
___ Federal 2
___ Greek Revival 3
___ Roman Classicism 4
___ Egyptian Revival 5
___ Early Goth. Reviv. 6
___ Romanesque Reviv. 7
___ Octagon Mode 8
___ Victorian Gothic 9
___ Italianate 10
___ Second Empire 11
___ Stick Style 12
___ Queen Anne 13
___ Eastlake 14
___ Shingle Style 15
___ Richardsonian Rom. 16
___ Chateauesque 17
___ Beaux-Arts Class. 18
___ 2nd Renaissancesty 19
___ Georgian Revival 20
___ Late Gothic Rev. 21
___ Jacobethan Reviv. 22
___ Prairie Style 23
___ Western Stick 24
___ Mission Style 25
___ Neo-Federalism 26
___ Bungaloid 27
___ Span. Col. Reviv. 28
___ Pueblo Style 29
___ Modernistic 30
___ Internat'l. Style 31
___ Mission 32
___ Neo Formalism 33
___ Wrightism 34
___ Neo-Expressionism 35
___ Brutalism 36
___ Vernacular-rural 37
___ Vernacular-urban 38
___ (Vernacular-check above style(s) if applicable also)

23. Vernacular

___ Single pen 1
___ Double pen 2
___ Hall-and-parlor 3
___ Central passage 4
___ I House 5
___ Shotgun 6
___ Double crib 7

24. No. of Storeys

___ 1 1
___ 1½ 2
___ 2 3
___ 2½ 4
___ 3 5
___ 3½ 6
___ 4 7
___ 5+ 8

25 Roof type(Mjr form)

___ Gable 1
___ Hipped/gable 2
___ Hip 3
___ Gambrel 4
___ Mansard 5
___ Nalifax 6
___ Shed 7
___ Saltbox 8
___ Flat 9
___ Dome 10

26 Building Materi

___ Brick 1
___ Stone 2
___ Log 3
___ Wood-lumber 4
___ Stucco 5
___ Steel 6

Building Mat Cont'd:

___ Concrete 7
___ Concrete block 8
___ Tile-unglazed 9
___ Tile-glazed 10
___ Cast Iron 11
___ Other metal 12
___ Terra cotta 13
___ Glass 14
___ Earth 15

27. Soil

___ Clayey 1
___ Silty 2
___ Loamy 3
___ Sandy 4
___ Humus 5
___ Gravel 6
___ Rock 7

28. Water Source

___ Mississippi 1
___ Other perennial 2
___ Intermit. stream 3
___ Course confluence 4
___ Spring 5
___ Swamp/bog 6
___ Natural lake 7
___ Man-made pond 8
___ Slough 9
___ Ditch 10

29. Distance to water (Meters) _____

30. No. drainage desig _____

31. Ill. division des _____

32. Reporter Status

___ CRM Report 1
___ Other professional 2
___ Amateur/Society 3
___ Amateur/Individual 4
___ Hist. map/document 5
___ Unknown 6

33. Record date _____

34. Level of Invest

___ Phase I 1
___ Phase II 2
___ Phase III 3
___ Preliminary 4

35. Methodology

___ Explicitly stated 1
___ Stated (incomp.) 2
___ Not stated 3

36 Locational Data

___ Explicitly (USGS) 1
___ Sketch(incomplete) 2
___ Not indicated 3

37 Bibliographic Entry

___ ASM 1
___ ASI 2
___ CRM 3

38. Elevation (m.s.l.) _____

39. Other Important Characteristic(s)

_____

_____

_____

_____

_____

Bibliographic Entry:

Comments:

Figure 3.
Site Data Summary Sheet

sequence terminology. Types of minerals recorded in features, chert names, distance between post molds, and several other more specifc data were not included since the information is generally recovered from excavations and is almost never present on a recorded site form. Architectural data suggested but not included generally involved specific detail in features, interior woodwork, etc.

All data gathered concerning recorded sites were entered on the ERC Data Sheet (Figure 3). In almost all instances, complete data sets (prehistoric or historic) were not available on the original site form. In some instances information was recovered from excavation reports, journal articles, or completed National Register of Historic Place forms. These were the exceptions rather than the rule, however, and 80% of the site forms were found to contain insufficient information to list all but location and general site characteristics (mound, habitation, house, barn, etc.)

Coding the information exhibited by previously recorded site forms for entry on the data sheet forms required several decisions and additional data generation once the site locations had been determined and entered on topographic maps. The steps involved in this procedure are detailed in the appendices. Briefly, information stated on site forms was transferred as stated. In instances where the recorder made obvious errors (i.e. noting an Archaic site but illustrating Woodland and/or Mississippian ceramics and lithics) the additional interpretations were included along with the original interpretation. Adjustments in site locational information are discussed in the mapping segment of the methodology section. When the data sheet forms were completed the information was transferred to raw data forms (See appendacies) and then punched on computer cards for storage and retrieval purposes.

Cultural Resource Management (CRM) Report Review

A major component of the mapping segment of the tasks included recovery of locational data pertaining to areas within the GREAT III which had been subject to intensive cultural resource survey. This was carried out by means of review of CRM reports which should specify areas which were observed and methods involved in the observation. For purposes of bibliographic entries several other types of information were collected from the CRM reports reviewed during the investigation. The form prepared for this for this process is shown in abbreviated version below. CRM statements located at DNR/HPP, DOC/DHS, St. Louis District, Corps of Engineers (SLC), U.S.D.A. Forest Service, and other repositories were reviewed.

Abbreviated version of CRM review form:

1. Entry #_____ 2. State_____ 3. County_____
4. Drainage_____ 5. U.S.G.S. topographic sheet_____
6. Author/Affiliation_____ 7. Conducted for_____
8. Title_____
9. Investigation date_____ 10. Level of Investigation_____
11. Report location_____ 12. Investigation results_____

The CRM data sheets include space for comments, a check list for level of investigation, and take up a single page for each CRM entry (See appendices). The form allows rapid evaluation of CRM statements for overview purposes.

Mapping Procedures

Two of the primary purposes of mapping cultural resources is to provide a visual planning aid with which to make an initial assessment of the impact of future activities on the cultural resources in specific project areas and to avoid unnecessary resurvey in areas in which an assessment has already been completed. To satisfy these objectives it was and is necessary that certain requirements be met. These requirements are: (1) an investigative procedure that completely exhausts those sources of data open to investigation; (2) an accurate representation of the specific recorded data and not just a rendition of the old generalized cultural resource areas available up to this time; (3) a map key system supplying certain basic data visually such as site type, National Register significance, form, and reliability of data; (4) a notation and indexing system capable of handling complex high site density areas simply and without obliterating large portions of the map surface; and (5) a total system which allows for the future expansion of the data base. These requirements were addressed in the following manner during the present investigation.

(1) Investigative Procedure: The Missouri site records are centralized, computer indexed, cross-referenced by county, fractional section, township, range, and drainage and fully micro-filmed. These records were fully opened to this investigation including all original forms, notes, and correspondence files. Though very little mapping of sites has been conducted along the Missouri side of the river and also considering that most of the sites were recorded by amateurs or amateur society members, the open access to the files and the excellent conditions for indexing and cross-referencing made it possible to accurately map all recorded cultural resources and to establish site location probability zones to protect those sites with incomplete locational data.

The investigation of the Illinois records was hampered by closed files, the fractured condition of the record, and the lack of a consolidated repository of original sites forms, although some attempt at consolidation is being made by the IAS and cooperating institutions. The IAS files and the files of the cooperating institutions containing the original site data are not open to outside investigation with some exceptions. The data contained in DOC/DHS, Illinois Department of Transportation (IDOT), U.S.D.A. Forest Service, the St. Louis Corps (SLC), and institutions which were cooperative, however, contain sufficient site locational data for most mapping purposes. The procedures would have been more effective had all original site forms been opened for inspection.

To conduct an investigation under these conditions the records of the agencies and institutions utilized had to be compiled and corrected.

The Illinois DOC/DHS was using a mapping system as the only index of sites on file. The sites were indicated on U.S.G.S. topographic sheets by means of an "x" made in the general location of a site as found on the site forms. No specific site boundaries were indicated nor was designation of National Register significance. The marks on the maps were generally not the actual locations of the sites and in many instances several hundred meters away from the site form locational designations. These maps were reviewed and copied and an index was prepared of all sites within the project boundaries. There was, however, no practical method of cross-checking this index as no other available index existed.

(2) Site Specific Mapping: To insure the most reliable and accurate site location notation all final site locations were mapped directly from the site forms. The site locations copied from DOC/DHS maps were corrected and completed. Because the data derived from the site forms held by this agency varied in reliability, seven types or levels of site data were defined and visually presented on the maps which are discussed below. The ASM site forms and indexing system also contain numerous recording and data transfer errors and the same system was applied to data recovered from the Missouri repository.

Type 1. Original site forms filed by the investigating professional or amateur containing accurate site maps, particularly those made on U.S.G.S. topographic sheets and containing good geomorphic and legal descriptions.

Type 2. Same as Type 1 except they do not contain site map and quality of data varies. (All Missouri sites fall into the Type 1 or Type 2 catagories).

Type 3. Site records with minimal data which may or may not be an actual original form which does not contain a map or geomorphic description but contains a legal description of less than 40 acres.

Type 4. Same as Type 3 except legal description of 40 to 80 acres.

Type 5. Same as Type 3 except legal description of greater than 80 acres.

Type 6. Same as Type 4 except contains no legal description and only a UTM center point location.

Type 7. Sites for which only an approximate location is given and/or no data form is available; sites of questionable location; sites of questionable existance; and sites with insufficient or incorrect data which could not be corrected.

(3) Map Key System: Color, shape, and character codes were developed for the visual presentation of basic data on the Corps base maps. National Register properties, properties determined elgible for National

Register inclusion, and Landmark properties are shaded red on the base maps. Sites potentially eligible for National Register inclusion are shaded orange, pink, or purple, depending on the type listed above. This category includes sites recommended eligible by contractors, agencies, archaeologists, historians, or other individuals but not in the determination of eligibility process and all other sites which have not been determined ineligible through the appropriate legal process. As a result, most of the entries on the base maps are either orange, pink, or purple. Sites in the determination of eligibility process are left clear for later update. The only problem this creates for future update is what to do with sites that have been determined eligible (colored red) but have been mitigated and are no longer in existence.

The color code is used to portray the probability of encountering or recovering a site in an area on the basis of the type of data with which the site was noted on the project maps as well as National Register status. Sites that are potentially eligible for inclusion to the National Register are shaded pale orange where only a 1/4 section designation for location is noted on a site form and dark orange where 1/4 1/4 1/4 section information is given. The other colors utilized are discussed below and refer to the types indicating exactness of locational data which were listed above.

Type 1. (good locational data) Boundaries are specifically delineated (Red - National Register category, Orange - potentially eligible, Clear - in process of determination of eligibility)

Type 2. (less clear locational data) A circle defining the maximum area that would satisfy the locational data found on the site form (Red, Orange, or Clear).

Type 3. (less than 40 acre locational zone) A circle or rectangle encompassing the legal description and allowing for reasonable extension of site boundaries across legal boundaries (Red, Orange, or Clear).

Type 4. (40 to 80 acre site location zone) Same as 3.

Type 5. (80 or more acre site location zone) Same as 3.

Type 6. (UTM center point) A circle shaded purple.

Type 7. (questionable site location) A circle shaded pink.

Yellow shading indicates areas which have been subject to intensive Phase I survey. Blue shaded lines define the GREAT III overview boundaries within which the investigation was carried out.

The notation and indexing system devised for the project employs the use of small hexigon tags for each recorded site on the map. This shape allows clustering of tags without losing their individual purpose. The tags themselves are multi-directional by nature and allow several

possible positions of the characters within them. Each archaeological site per base map by state was assigned a number beginning with 1. Each historical site (except historic archaeological sites) was assigned a letter beginning with "A" or two letters if the number of historic sites per state per base map exceeded 26. Each survey per base map per state was assigned a Roman Numeral beginning with "I". An index divided by state was then prepared for each base map giving the equivalent site numbers for each tag. Tags were, whenever possible, placed in an area of low site probability (generally the river). New sites recorded by the holders of these maps should be tagged in yellow in order to differentiate the time base line. Each tag of the overview is shaded in non-photo blue. As sites are field varified, the tags should be overshaded with yellow producing a green tag for such sites.

(5) Updating System: The Corps base maps which were prepared following the above outlined procedures have been provided to the St. Louis District, Corps of Engineers, the Missouri Department of Natural Resources/Historic Preservation Program, and the Illinois Department of Conservation/Division of Historic Sites. The visual update of these maps may be carried out using the same methods that were utilized to produce them in the first place. It is, however, recommended that the additions to the maps be shaded in yellow in order to differentiate the time base line under which the original maps were produced and lessen the possibility of confusion as to which sites and areas are in need of updating procedures. In addition, the completed base maps have been photo-reproduced on clear overlays which are available at the St. Louis District Environmental section. The overlays may be used to copy any number of sets of paper maps or mylar copies from which working draft updating may be carried out.

Technical Elements - Map Preparation: Transfer of final data from U.S.G.S. topographic sheets to project base maps involved a drastic change in scale to reduce the probability of error. A light table was developed containing a 35 mm slide projector capable of optically adjusting the scale of the photographed quads. To match the base map this image was projected on the back of the base map and then directly traced.

Absorbency problems faced due to the quality of the base map paper eliminated the use of technical pens, mechanical lettering devises and felt or fiber tip markers. The pen recommended for use on these maps is the "Precise Ball Liner" by Pilot, the micro-ball construction will not allow the paper to pull ink from the pen. The KOH-I-NOOR Rapidograph loaded with black plotter ink for paper by KOH-I-NOOR (ink # 308 1-F) was used for characters on areas of the base maps where absorbency had been reduced by color shading. Prismacolor Pencils with flexible lead by Eagle were used and recommended for all color shading. It is also recommended that shaded areas be stippled. Pentel White # 100WS pens were used for editing.

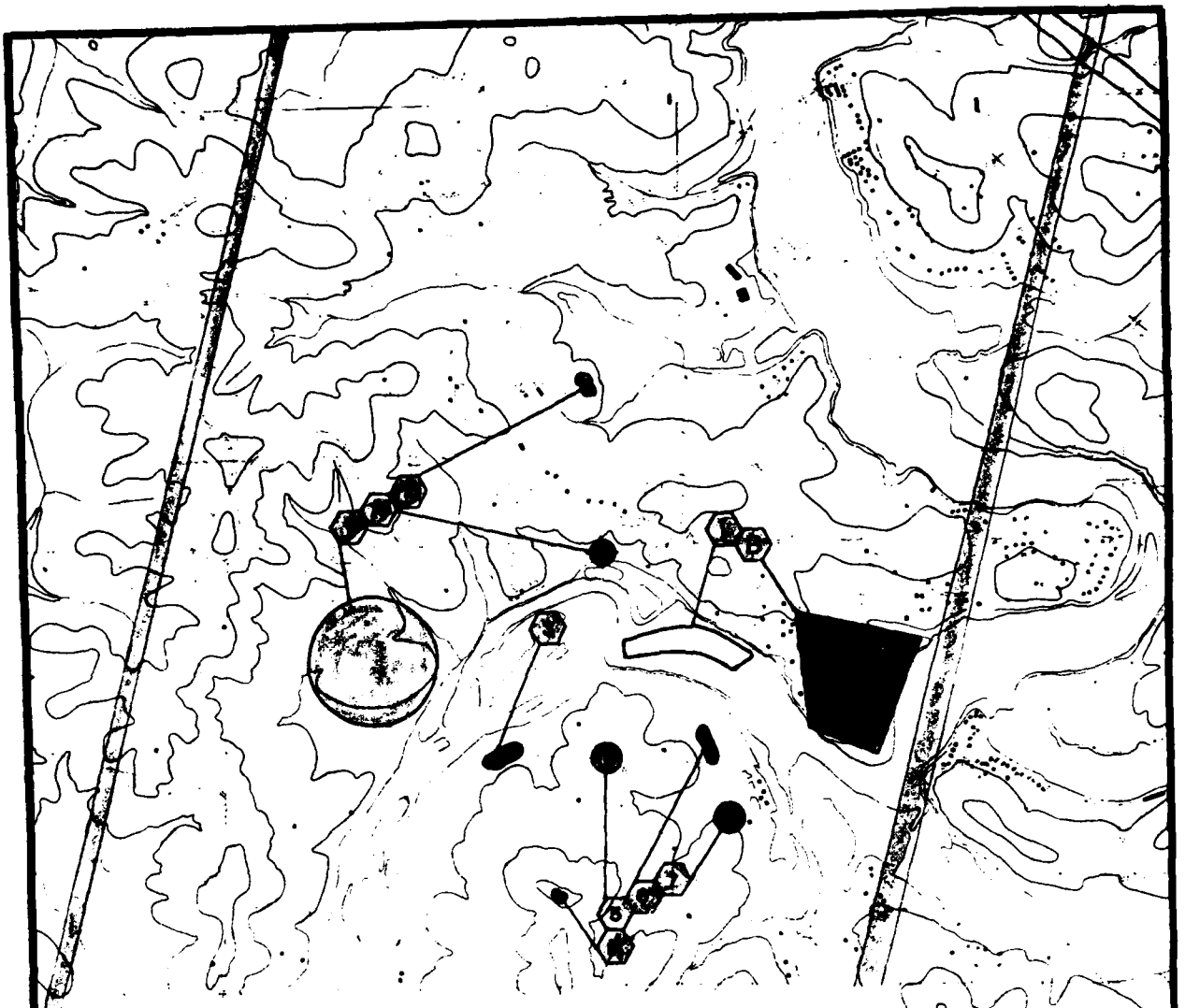


Figure 4. Example of Mapping Key for Base Map Entry

1 = Type 2 (archaeology) Potentially eligible
2 = Type 1 (archaeology) NRHP Site
3 = Type 1 (archaeology) NRHP Eligible
4 = Type 1 (archaeology) Mitigated
5 = Type 4 (archaeology) Only UTM's given
6 = Type 1 (archaeology) In process of DOE
7 = Type 5 (archaeology Information poor

A = Structure Potentially eligible
B = National Register District - archaeology or architecture
I = CRM Survey Area
Blue Line = Corridor Boundaries

Figure 6.
Mapping Procedure and General Indexing Criteria (Fictitious map) 7.5 minute scale

Computer System

All previously recorded sites reviewed from available sources during the present investigation were characterized on the site data sheets developed for the project. The data from these forms were then transferred to raw data sheets from which computer cards were punched. A card system was necessitated by the varied computer systems which had to be considered as repositories for the site information and cards are almost universally accepted in any main frame system. Programs and the data file have been stored on disk at DNR/HPP and have been entered on the St. Luois District system. A set of cards containing programs and site data is to be submitted to DOC/DHS. Language utilized is COBOL which was selected because of universality.

Briefly, the programs consist of an edit program which allows checking for errors in the data base entries, a program that generates data sets, an update - delete - add program which allows modification of records in the file on a selective basis, and a series of retrieval programs which return subsets of the master file based on whatever parameters the user selects. The program descriptions are located in the appendices of this volume.

LEGAL SETTING

Various portions of the GREAT III study area have been and will be subject to disturbance from projects requiring cultural resource compliance related evaluation. On both sides of the Mississippi River cultural resource management reports illustrate work carried out for several federal agencies including the Environmental Protection Agency, the Department of Transportation, the Corps of Engineers, the U. S. D. A. Forest Service, the Federal Aviation Administration, and the Economic Development Administration among others. The compliance process has resulted in discovery of hundreds of potentially eligible cultural resources, allowed project modification to avoid and preserve sites, directed mitigation where project modifications have not been feasible, as well as determined that many sites were not eligible for inclusion to the National Register of Historic Places. The legal base for federal involvement in cultural resource management was initiated as early as 1906 (Antiquities Act). Subsequent federal acts, guidelines, executive order, and regulations have built a foundation from which ongoing cultural resource management (CRM) statements and work are pursued. The GREAT III is itself the result of the 1976 Water Resources Development Act (Public Law 94582). The benefit of this action will be in its preservation capabilities resulting from availability of data which can be incorporated in planning processes that may have direct or indirect impact upon fragile cultural resources. In addition, the states involved in the GREAT III study area (Missouri and Illinois) are a very important component of the federal compliance process, particularly in terms of input and consultation in reference to necessity for cultural resource inventory and assessment and throughout the processes initiated when it is discovered that valuable cultural resources may be impacted by proposed federal projects. Planning tools such as that represented by the GREAT III efforts can enhance these joint efforts involved in cultural resource management to the benefit of the resources themselves as well as the efficiency and effectiveness of the compliance process.

In terms of specific use of GREAT III cultural resource materials the base maps illustrating specific site locational information should give warning of sensitive zones during intial project planning stages and allow development of potentially less disruptive alternative action. Although survey efforts are sporadic and many high potential cultural resource zones have not been evaluated, those defined by the present study can serve in this guidance function to some degree. In addition, State Historic Preservation Office (SHPO) input is required beginning in early phases of proposed federal projects which may impact cultural resources. GREAT III cultural resource data will allow a readily available reference for suggesting cultural resource potential, possible project impacts, and evaluation of proposed project plans.

The following listing presents brief descriptions of the federal acts and regulations concerning cultural resource management as summarized by the Missouri Department of Natural Resources/Historic Preservation Program Archaeological Resource Management Plan, 1st Approximation September 1980.

ANTIQUITIES ACT OF 1906 AND UNIFORM RULES AND REGULATIONS: (P.L. 59-209; 34 Stat. L. 225; 16 U.S.C. 431-433). The Act established a fine and/or imprisonment for excavating or destroying historic or prehistoric remains on lands Federally owned or controlled. It further granted authority for the President to declare historic landmarks and for the Secretary of the Interior to issue permits for examination, excavation, or gathering of ruins, archaeological sites, and objects of anitquity, and permits subject to recommendation and supervision by the Smithsonian Institution (after Struever 1979).

HISTORIC SITES ACT OF 1935: (P.L. 74-292; 49 Stat. 666; 16 U.S.C. 461-467). This Act set a national policy to preserve for public use historic sites, buildings, and objects of national significance "for the inspiration and benefit of the people of the U.S." It transferred to the National Park Service the responsibility for carrying out policy, including surveys to determine which historic and archaeological sites, buildings, and objects have exceptional value. Monies for purchase or maintenance of historic or archaeological buildings, sites, objects, or properties are to be appropriated by Congress.

THE RESERVOIR SALVAGE ACT OF 1960: (P.L. 86-523; 74 Stat. 222; 16 U.S.C. 469-469c). The Act gave the Department of the Interior responsibility for preservation of historical and archaeological data that might otherwise be lost as a result of the construction of a Federal dam, and arranged curation with any interested Federal and state agencies, educational and scientific organizations, and private institutions and qualified individuals with a view to determining the ownership of and most appropriate repository for any relics and specimens recovered.

NATIONAL HISTORIC PRESERVATION ACT OF 1966: (P.L. 89-665 as amended; 80 Stat. 915; 16 U.S.C. 4701 as amended by P.L. 94-422, (P.L. (93-54, P.L. 94-458 and P.L. 96-515). Established a National Register or Historic Places, the Advisory Council on Historic Preservation to advise the President and Congress on matters related to historic preservation, and the State Historic Preservation Officer. Required that before a Federal agency could destroy a property on the National Register (amended to include eligible properties), it must consult with the Advisory Council to find ways to mitigate or avoid such destruction (Sec. 106). Provided grants for historic preservation and gave the Federal government authority to acquire "significant" sites by power of eminent domain.

FEDERAL - AID HIGHWAY ACT OF 1968: (amends Department of Transportation Act, P.L. 89-670, 80 Stat. 931). To develop transportation plans and programs that include measures to maintain or enhance the natural beauty of the lands traversed. No program or project involving the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites shall be approved unless (1) there is no feasible alternative, and (2) such programs include all possible planning to minimize harm to above lands resulting from such use.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969: (83 Stat. 852; 42. U.S.C. 4321). Required that before any significant project is undertaken by a Federal agency, an environmental impact statement containing a complete evaluation of the effects of the project on the environment, specifically including historical, cultural and archaeological aspects, must be prepared.

EXECUTIVE ORDER 11593 OF 1971: Detailed Federal agency responsibilities under the prior laws, including an order to conduct studies to locate and nominate properties under their control that might qualify for the National Register. Required that agencies exercise caution in the meantime to make certain that they did not unnecessarily damage eligible properties on Federal lands. Ordered the Department of the Interior, through the National Park Service, to develop criteria and policies for evaluation of important properties and determination of their eligibility for the National Register (after Struever 1979).

ARCHAEOLOGICAL AND HISTORIC PRESERVATION ACT OF 1974: (P.L. 93-291; also known as Moss-Bennett Act). Specifically provides for the preservation of historical and archaeological data which otherwise might be irreparably lost or destroyed by 1) the construction of a dam by any Federal agency or 2) any alteration of the terrain caused as a result of any Federal construction project or federally licensed project, activity, or program. The Federal agency involved may transfer up to 1 per cent of the project funds for cultural resources investigation.

ARCHAEOLOGICAL AND PALEONTOLOGICAL SALVAGE: (23 CFR 765, February 1, 1974). A principal objective of this memorandum was to increase the knowledge of archaeological and paleontological objects through cooperation with recognized museums, universities, colleges, or other scientific or educational institutions. It became national policy that special effort be made to preserve for public use objects, sites or buildings of National, State or local historic significance (23 U.S.C. 138). It became a Federal crime to appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on Government lands without permission of the head of the department having jurisdiction over such lands (16 U.S.C. 433).

LAND AND WATER CONSERVATION FUND ACT OF 1976: (P.L. 94-422; 90 Stat. 1319; 16 U.S.C. 470b-470t). Amendment to the National Historic Preservation Act that established a separate Historic Preservation Fund; gave the Secretary of the Interior discretionary authority to increase the matching ratio of grants to states for preparation of preservation plans; established Advisory Council as independent agency with authority to issue rules and regulations.

THE PRESIDENT'S MEMORANDUM ON ENVIRONMENTAL QUALITY AND WATER RESOURCE MANAGEMENT, JULY 12, 1978: The Memorandum directed the Advisory Council to issue final regulations under the National Historic Preservation Act by March 1, 1979, and further directed Federal agencies with water resource responsibilities and programs to publish procedures implementing the Act not later than three months after promulgation of final regulations by the Council (36 CFR 800, sec. 800.1).

ARCHAEOLOGICAL RESOURCES PROTECTION ACT OF 1979. (P.L. 96-95). Enacted to provide a comprehensive framework for protecting and regulating use of archaeological resources of public and Indian lands. Provided for all excavation and removal of archaeological resources on public land to be done pursuant to a permit issued by the Federal land manager of the land involved. Provided for fines and/or imprisonment for excavating or destroying such resources without permit. Such responsibilities were formerly within the ambit of the Antiquities Act of 1906, although it should be noted that the Antiquities Act has not been repealed and presently in force.

36 CFR 60: (P.L. 89-665; 80 STAT. 915; 16 U.S.C. 470) Sets up a register of districts, sites, buildings, structures, and objects of national, state or local significance in American history, architecture, archaeology, and culture; expanded and maintained by the Secretary of the Interior under authority of section 2(b) of the Historic Sites Act of 1935 (49 Stat. 66, U.S.C. 461) and Section 101 (a) (1) of the National Historic Preservation Act implemented through 36 CFR 60.

36 CFR 61: Set forth criteria established by the Secretary of the Interior for preparing comprehensive statewide historic surveys and plans under the provisions of the National Historic Preservation Act of 1966. For purposes of the National Register and grants programs, a comprehensive statewide historic preservation plan shall be prepared under the direction of the State Historic Preservation Officer. The plan shall consist of a report or series of reports on the State historic preservation program. These reports shall describe, analyze, and make future projections about the program (36 CFR 61, sec. 61.7 (a)).

36 CFR 63: (As amended P.L. 91-243, P.L. 93-54, P.L. 94-422, P.L. 94-458, P.L. 96-199, P.L. 96-244, P.L. 96-515). Amendments to update and revise in minor respects the procedures for nominations by State and Federal agencies. The amendments (1) make clear that when a State Review Board reviews and approves a procedurally correct nomination the SHPO must submit the nomination to the National Register unless the SHPO considers the property does not meet National Register criteria, and (2) amend the procedures by which nominations to the National Register by states and Federal agencies are reviewed.

36 CFR PART 800 PROTECTION OF HISTORIC AND CULTURAL PROPERTIES (JAN. 30, 1979). The Advisory Council on Historic Preservation regulations implement Section 106 of the National Historic Preservation Act, as amended (16 U.S.C. 470f) and directs Federal agencies to follow certain steps in order to comply with the requirements of the National Historic Preservation Act and Executive Order 11593. The regulation also requires for agencies to consult with the SHPO on Federal undertakings throughout the process. It is the responsibility of each agency official to request Council's comments on any proposed undertaking which may effect a National Register or National Register eligible property and to provide adequate information for review of the effect of the undertaking; provide for adequate consideration of modifications or alterations to the proposed undertaking that could avoid, mitigate, or minimize adverse effects. The process is designed to assure that alternatives to avoid or mitigate an

adverse effect on a National Register or eligible property are adequately considered in the planning processes. The regulations are binding on all Federal agencies and specify the manner in which the Council will render its comments to Federal agencies when their undertakings affect properties included in or eligible for inclusion in the National Register of Historic Places. The criteria and procedures to be used in determining National Register eligibility and in making determinations of effect are outlined in these regulations.

The Compliance Process

The body of law briefly summarized above defines all cultural resources as potentially significant aspects of the environment. Authority for protection of historic properties derives from the National Historic Preservation Act of 1966 and Executive Order 11593. Procedures for compliance with these mandates are set forth in 36 CFR 800 - Protection of Historic and Cultural Properties (Federal Register, 1/30/79) which outlines in detail the basic compliance process. Given below is a brief outline of the process. It should serve only as a general guide and the full text of 36 CFR 800 needs to be consulted for details of the procedures pertaining to any specific part of the compliance process. 36 CFR 800, Sec. 800.4 provides that "as early as possible" in the planning process for an undertaking, an agency shall take the steps listed below to comply with Section 106 of the National Historic Preservation Act of 1966 and Section 2 (b) of Executive Order 11593. It further states that the head of the agency responsible for the undertaking (the agency official) has the primary responsibility to conduct the appropriate studies and to provide adequate documentation of the effect of the undertaking on a National Register or eligible property for proper review of the effect of the project.

STEP 1. IDENTIFICATION OF NATIONAL REGISTER AND ELIGIBLE PROPERTIES: At the outset, the agency official consults with the State Historic Preservation Officer (SHPO), through the DNR in Missouri and the Office of Management and Budget in Illinois, the National Register, and other sources to determine what historic properties are known within the area of an undertaking's potential impact. Based on this records search, the agency official shall determine what further actions are necessary to identify National Register eligible properties.

This decision must be consistent with discharging the agency's affirmative responsibilities to locate and identify eligible properties. In areas not previously surveyed at a level sufficient to meet this criterion the area should be professionally surveyed to identify all the properties in the project's impact area. The agency official should follow the State Historic Preservation Officer's recommendations regarding the need for further survey.

If a survey is recommended, the agency contracts with a professional archaeologist to survey the area and prepare a report of findings. Following identification of the properties present in the area of the undertaking's potential impact, National Register criteria (as listed in 36 CFR 60, Section 60.6) are applied to all properties that may possess historical, architectural, archaeological, or cultural value. If a property meets these criteria, a determination of eligibility (DOE) is requested from the Secretary of the Interior of in accordance with 36 CFR 63. If no property meets these criteria, the agency may proceed with the undertaking.

STEP 2. DETERMINATION OF THE EFFECT OF THE UNDERTAKING. For each National Register or eligible property, the Criteria of effect (36 CFR 800, Sec. 800.3 (a)) are applied. If no effect is determined, the undertaking may proceed. If however, an objection is made, the Executive Director of the Advisory Council on Historic Preservation reviews the determination. If effect is determined, the Criteria of Adverse Effect (36 CFR 800, Sec. 800.3 (b)) are applied by the agency official. If no adverse effect is determined, documentation is provided to the Executive Director of the Advisory Council. If the Executive Director concurs, the undertaking may proceed. If however, adverse effect is determined, a case report is prepared by the agency official the SHPO is notified, the case report is submitted to the Executive Director and this initiates the consultation process. The consultation process is also initiated if the Executive Director objects to the determination of no adverse effect and the agency official does not accept the conditions to remove the objection, or if no conditions are given.

STEP 3. THE CONSULTATION PROCESS: The consultation process is set forth in Section 106 of the National Historic Preservation Act of 1966, where it is stated that a Federal agency will, prior to any undertaking, "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register." It further stipulates that "the head of any such Federal agency shall afford the Advisory Council on Historic Preservation . . . a reasonable opportunity to comment with regard to such undertaking."

The Agency official, the SHPO and the Executive Director are the consulting parties to consider the alternatives to avoid, mitigate, or minimize adverse effects on a National Register or eligible property. After review of the documentation, they try to agree on an alternative to avoid or satisfactorily mitigate the adverse effect on the property. If they agree, a Memorandum of Agreement (MOA) is prepared, specifying the action to be taken. This memorandum constitutes the comments of the Council and evidences satisfaction of the agency's responsibilities for the proposed undertaking.

Upon completion of the actions specified in the Memorandum of Agreement, the agency official reports to the Advisory Council on the actions taken. If a Memorandum of Agreement cannot be reached, the matter is taken up directly by the Advisory Council at one of its regular meetings. The regulations specify only the procedures to be followed: they do not specify the manner in which they are actually performed. In Missouri, the actual process is essentially as outlined in Fig. 5 and in Illinois it is similar. The figure illustrates how the procedures required under 36 CFR 800 and certain other federal regulations are implemented in Missouri and Illinois and illustrates the roles of the SHPOs' in terms of involvement in the compliance process.

Citizen's Recourse: 36 CFR 800 places upon the agencies, and the SHPO, the burden of the obligation to comply with the law, particularly with Section 106 of the National Historic Preservation Act of 1966. Agencies do not always comply, however, either through unwillingness or naivete. In this case, it is incumbent upon the archaeologist, or any other private

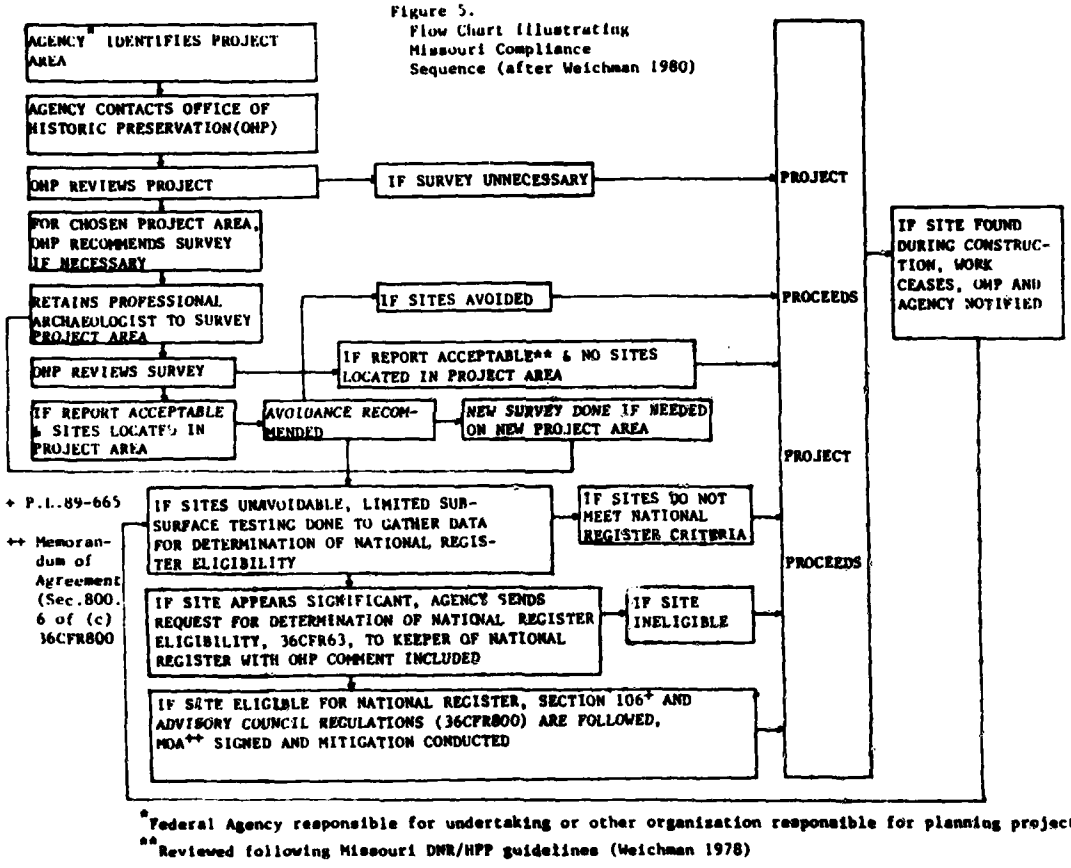


Figure 5.
Flow Chart Illustrating Missouri Compliance Sequence (after Weichman 1980)

*Federal Agency responsible for undertaking or other organization responsible for planning project

**Reviewed following Missouri DNR/HPP guidelines (Weichman 1978)

citizen, to force the system and try to bring the agency into compliance. King, et al. (1977:177) suggest monitoring the agency to make sure a survey has been done, that properties are evaluated, effects and adverse effects are determined, and a Memorandum of Agreement or council comment obtained. A protest should be made to the agency, the Advisory Council, the SHPO, and the OAHP if failure to comply occurs at any step of the process. The same is true later if the agency is not in compliance with the terms of the Memorandum of Agreement. If such protests and appeals do not produce action, an appeal to a Congressperson (Senator or Representative) is very likely to produce results. The courts should be considered as a last resort only, and then only with a well-documented case.

The federal compliance component of cultural resource management is but one aspect of state-wide preservation/managment programs. While federally associated projects make up a large portion of ongoing cultural resource investigations, they represent only short term management. Both Illinois and Missouri SHPO's are involved in development which will organize their respective states preservation programs into viable and dynamic forces (The Interim Illinois Archaeological Preservation Plan Downer n.d., Planning Process for Archaeological Resource Management in Missouri 1st Approximation, MAPA 1980). The Illinois Department of Conservation/Division of Historic Sites (DOC/DHS) has also developed and initiated an intensive and extensive state-wide historical/architectural program (cf. Preservation Illinois 1977). Historical/architectural preservation plan design is currently in progress (Personal Communication: James Denny).

The state archaeology programs focus on both short term federal compliance and long term preservation and educational considerations. Proposed programs in Illinois and Missouri are responding to a need to provide cultural resource protection by improvement of federal compliance procedures, initiation of surveys of archaeologically unknown areas and state owned lands, generation of information through development of regional data bases from which appropriate scientific questions can be drawn, and improve public awareness and appreciation of archaeological resources. These programs will greatly enhance cultural resource management involving federal compliance projects in terms of increasing effectiveness and efficiency throughout all steps in the required procedures.

Of perhaps utmost importance for federal compliance projects, the focus of the present report, will be the collection, organization, and anlyses of archaeological data on a unit basis (region, drainage, and/or culture unit). The consultation process necessitates an effective means of evaluation and interpretation of significance of cultural resources once they are identified as well as determination of project areas which are likely to produce valuable cultural resources. The product from the state preservation programs will allow these interpretations from a much firmer basis than is currently in use. Specifically, it has been well documented that interpretations of significance on the basis of National Register eligibility criteria (36 CFR 60, Section 60.6) is an extremely problematic issue in many instances (cf. King et al. 1977). The results of the state preservation programs will allow the perspective which is lacking in many instances for efficient and effective compliance.

CULTURAL SETTING

Introduction

The cultural setting of the GREAT III encompasses possibly 20,000 years or more of human occupation which exhibits evidence of increasing complexity from the earliest known cultural periods to the present. The increased complexity associated with socio-economic patterns is both a function of change related to technological developments as well as the greater availability of information as one proceeds forward in time.

The earliest hypothesized occupation in the general study area - Early Man - is inferred from recovery of relatively crude stone tools possibly associated with extinct faunal remains. The Paleo-Indian period can be somewhat more definitely associated with fluted projectile points recovered from specific sites along with extinct fauna. The Archaic periods exhibit increased tool diversity hypothesized to be a function of an expanded subsistence base necessitated by changing environmental conditions. The Woodland periods exhibit diversity in ceramic types as well as lithic tools and ceremonial features and begin the important process of domestication of plants as a substantial factor in subsistence patterns. Mississippian periods encompassing prehistoric, proto-historic, and historic American Indian occupation of the GREAT III project area produced the impressive mound system still obvious today in the American Bottom and south along the Mississippi and a society replete with stratification system, agricultural subsistence base, and extensive trade networks. The large civic-ceremonial centers of the Mississippian rose and fell at varying time periods up until the entrance of European influences and later Europeans themselves in some areas of the midwest although Cahokia had lost its power 300 years earlier. By the time the Spanish and French established viable continuous outposts, the Indian populations had shifted to a more nomadic form of settlement and the earlier major population centers were no longer present. The 18th century saw developing interest in mineral exploitation, fur trade, land speculation, and European nationalistic endeavors. The Mississippi River valley became a chattel on a global scope that finally ended up the property of the newly formed United States. During the early 19th century, immigrants from the upper South, lured by cheap land and river access, began an influx which populated Mississippi River valley at a rapid rate. Displaced Indian tribes and groups moved through the area on a transient basis. After 1817 steamboats began to ply the river and commercial avenues opened which resulted in rapidly expanding communities and land acquisition concerns. St. Louis became a major commercial center while other early Mississippi River communities failed to entice the requisite commerce and associated population growth. Railroads and roads became the nemesis of the river boats and the river diminished as the controlling factor in the development of the Mississippi River valley.

Prehistoric Setting

The prehistoric through early historic Indian cultural activity in the midwestern United States has generally been divided into six chronological periods: Early Man (14,000 B.C. or earlier); Paleo-Indian (12,000 to 8000 B.C.); Archaic (8000 to 1000 B.C.); Woodland (1000 B.C. to A.D. 900); Mississippian (A.D. 900 to 1700). Historic cultural activity is considered to be from A.D. 1700 to the present. These time periods are not well defined units and their cultural expression varies chronologically from region to region as well as within regions. For instance, while the Cahokia civic-ceremonial system was developing, climaxing, and disintigrating through the Early Mississippian period, Woodland cultures were coeval in other portions of the midwest.

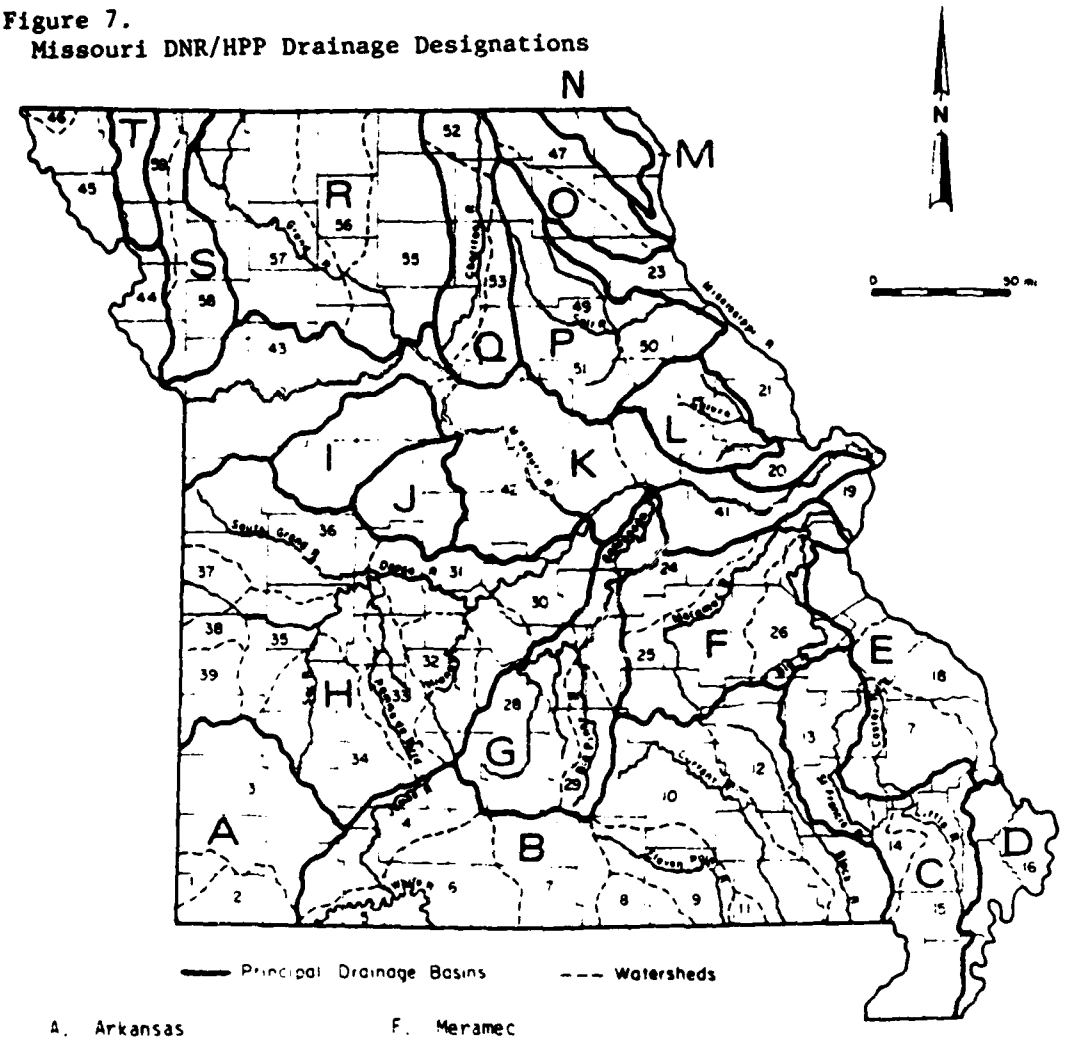
While general periods are recognized and diagnostic cultural materials and features are accepted as representing evidence of the presence of the aforementioned periods, the elaboration of regional and local cultural expressions do not present a clear-cut entity, particularly from Late Archaic onward. As a result, local sequences have been defined within the regions and localities represented within the GREAT III project area to include variation of sequence names, diagnostics, as well as disagreement over the appropriate sequential statements. The present investigation reviews the major periods and attempts to place local sequence definitions within this context. In all instances where varied interpretations have been hypothesized it is recommended that the original references be checked as the present review is too general to include these often highly technical definitions and arguments.

The following section presents a general cultural history of the GREAT III project area based on published literature, site records, and cultural resource management reports. The summary of the findings of the previously recorded site investigation are placed within the cultural history context in the findings section of this report. In general, previously recorded site forms contain too little data to contribute to detailed local sequence interpretations. When sufficient information is present it is almost always in the form of publications or CRM reports of investigations which were reviewed for the cultural history summary discussed below. We would like to stress that the brief review is presented as a means of placing the recovered data in the context of the GREAT III cultural sequences. The GREAT III study area encompasses several drainages in Missouri and a number of regions in Illinois, each of which has been interpreted and discussed by archaeologists with extensive familiarity with individual units. While the present investigation results can direct attention to previously recorded sites and general sequential statements, the regional syntheses necessary for specific research question development must rely on the proposed state preservation programs which will incorporate the much more extensive local sequence data recovered through many years of first hand experience in specific areas. The following review is initiated with Paleo-Indian, given the dearth of information or interpretaion of possible Early Man in the study area, and includes Early, Middle, and Late divisions in Archaic, Woodland, and Mississipian periods. Historic Indian and Euro-American occupation concludes the review. Potential research questions are suggested at the end of discussion of each period.

PERIOD	DATE	NORTH RIVER MISS-4,DIV-5 MISSISSIPPI VALLEY NORTH	DIVISION-5 LOWER ILL. VALLEY	MISS-3 GREATER ST. LOUIS	DIVISION-12 AMERICAN BOTTOM	MISS-2 OZARK HIGHLAND REGION	DIVISION-11,12 MISS-1 MISSISSIPPI VALLEY CENTRAL	DIVISION-11,12,13,14 LOWER MISSISSIPPI BOOTHEEL RIVERINE
American Period		Steamboats, Urban Development, Railroads						
	A.D.1800	Indian Relocation Movement						
Spanish/ French		Cahokia, Kaskaskia, Michigamea, Moingwena, Peoria, Tamaroa Tribes, European Exploration, Early Settlement & Expansion						
	A.D.1600							
Late Mississippian		Oneota	Oneota		Oneota		Kinkaid Focus	Lilbourn II, Caruthersville II, Towosahgy II, Peter Bess II Phases
	A.D.1400							
Middle Mississippian						Sand Prairie Moorehead Phases	Saline Phase	
	A.D.1250			Moorehead Phase Stirling Phase Fairmont Phase	Trappist	Ware Phase	*Kimmswick Focus*	
Early Mississippian		Perry Phase	Jersey Bluff Phase		Old Village	Plattin Phase	Plattin Phase	Langdon, Caruthersville, Wardell, Rich Woods, Lilbourn, Sandy Woods, Peter Bess, Towosaghy, Crosno, Sikeston, Beckwith, Lakeville Phases Baytown, Hoecake Phase
	A.D. 900				Late Bluff Phase	Meramec Spring Phase	Dillinger Focus	
Late Woodland		Ralls Phase	White Hall Phase	Patrick Phase	Early Bluff Phase		Raymond Focus	
	A.D. 400	Fox Creek Phase						
Middle Woodland Terminal		Salt River Phase	Pike-Hopewell Phase	Creve Coeur Assemblage			Crab Orchard	Barnes Ridge Phase
	A.D. 300							
Middle Woodland *Classic*		Pike Phase Central Valley Phase	Havana-Hopewell Phase					
	A.D. 100	Calhoun Phase	Initial Havana Phase	Havana Phase				
Middle Woodland Developmental		Monroe Phase						
	100 B.C.							
Middle Woodland Pioneer		Black Sand *Complex*	Black Sand Phase				Baumer	Burkett Phase
	500 B.C.							
Early Woodland		Peisker Phase?	Peisker Phase Marion Phase	Marion Phase	Marion Phase Falling Spring Titterington Lambras Lake Prairie Lake Cpx.			O'Bryan Ridge Phase
	1000 B.C.							
Late Archaic								
	3000 B.C.						Hidden Valley Aggregate II	
Middle Archaic								
	5000 B.C.							
Early Archaic		Hannibal Complex						
	7000 B.C.							
Dalton								
	8000 B.C.						Kimmswick-Extinct fauna associations	
Paleo-Indian		Fluted points recovered in most areas			Modoc Rock Shelter			
	12,000 B.C. ?							
Early Man				No Data				

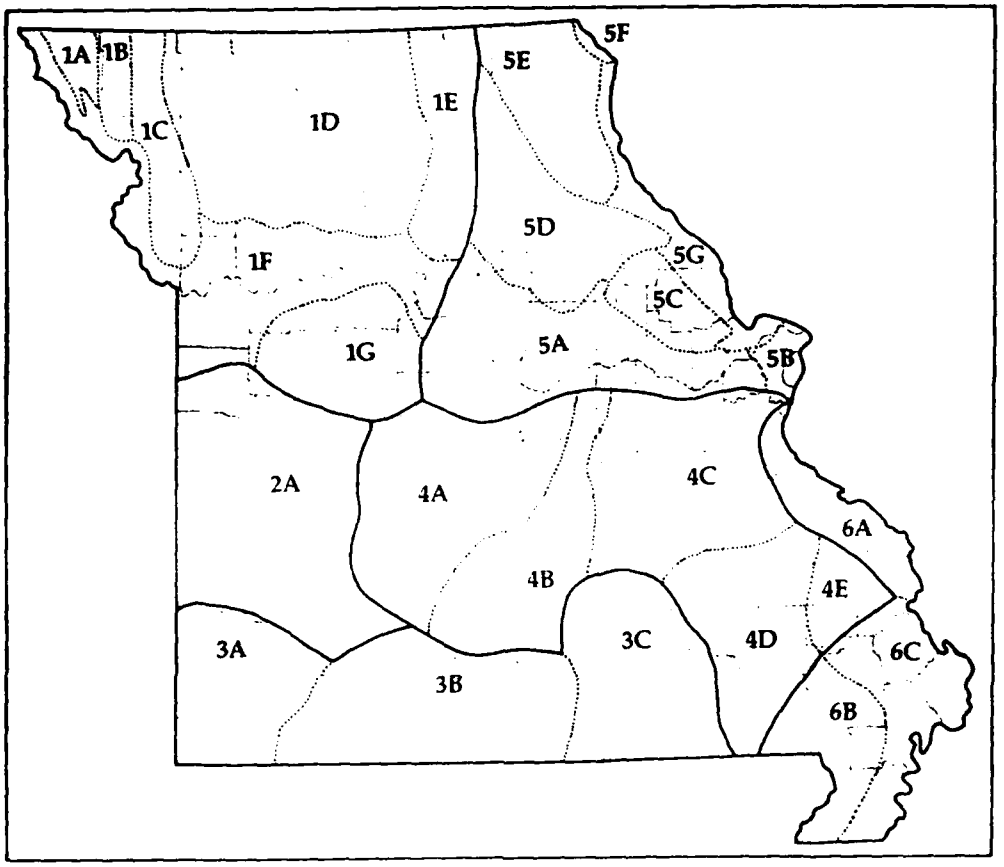
Figure 6.
General Cultural Sequences Proposed for Missouri Drainages and Localities and Illinois Natural Division in GREAT III Area.
(Drainages, Localities, and Divisions refer to Figures 7, 8, and 9)

Figure 7.
Missouri DNR/HPP Drainage Designations



A. Arkansas
   1. Lost Creek
   2. Elk
   3. Spring
B. White
   4. James
   5. Table Rock
   6. White
   7. North Fork
   8. Spring
   9. Eleven Point
   10. Current
   11. Fourche Creek
   12. Black
C. St. Francis
   13. Upper St. Francis
   14. Lower St. Francis
   15. Little River
D. Lower Mississippi
   16. Lower Mississippi
E. Upper Mississippi
   17. Whitewater/Castor
   18. Mississippi 1
   19. Mississippi 2
   20. Mississippi 3
   21. Mississippi 4
   22. Mississippi 5
   23. North River
F. Meramec
   24. Bourbeuse
   25. Meramec
   26. Big
G. Gasconade
   27. Lower Gasconade
   28. Upper Gasconade
   29. Big Piney
H. Osage
   30. Lower Osage
   31. Lake of the Ozarks
   32. Niangua
   33. Pomme de Terre
   34. Sac
   35. Upper Osage
   36. South Grand
   37. Marais des Cygnes
   38. Little Osage
   39. Marmaton
I. Blackwater
J. Lamine
K. Missouri
   41. Missouri 1
   42. Missouri 2
   43. Missouri 3
   44. Missouri 4
   45. Missouri 5
   46. Nishnabotna
L. Cuivre
M. Des Moines
N. Wyaconda/Fox
O. Fabius
   47. North Fabius
   48. South Fabius
P. Salt
   49. North Fork
   50. Salt 1
   51. Salt 2
Q. Chariton
   52. Upper Chariton
   53. Lower Chariton
   54. Middle/East Fork
R. Grand
   55. Grand 1
   56. Thompson
   57. Grand 2
S. Platte
   58. Platte
   59. One Hundred & Two
T. Nodaway

Figure 8.
Chapman's Missouri Regions and Localities (Chapman 1975:4).



1. Northwest Prairie Region: 1A Tarkio, 1B Nodaway, 1C Platte, 1D Grand, 1E Chariton, 1F Lower Missouri Valley I, 1G Lamine.

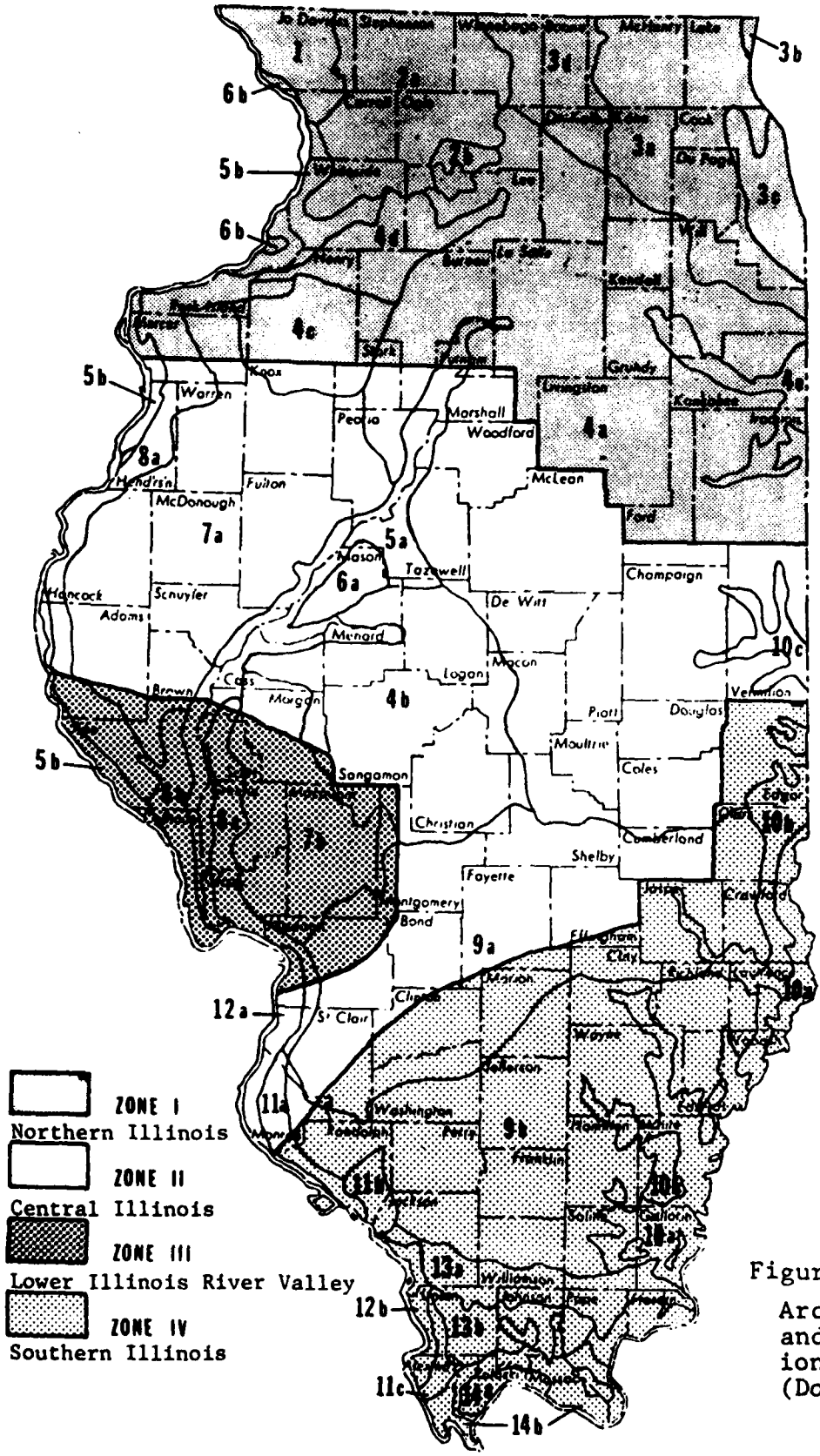
2. Western Prairie Region: 2A Upper Osage.

3. Southwest Drainage Region: 3A Neosho, 3B White, 3C Current-Eleven Point.

4. Ozark Highland Region: 4A Lower Osage, 4B Gasconade, 4C Meramec, 4D Upper Black - St. Francis, 4E Castor - Whitewater.

5. Northeast Prairie Region: 5A Lower Missouri Valley II, 5B Greater St. Louis, 5C Cuivre, 5D Salt, 5E Wyaconda - Fabius, 5F Des Moins, 5G Mississippi Valley North.

6. Southeast Riverine Region: 6A Mississippi Valley Central, 6B St. Francis Riverine, 6C Bootheel Riverine.



1 Wisconsin Driftless Division

2 Rock River Hill Country Division
- a Freeport Section
- b Oregon Section

3 Northeastern Morainal Division
- a Morainal Section
- b Lake Michigan Dunes Section
- c Chicago Lake Plain Section
- d Winnebago Section

4 Grand Prairie Division
- a Grand Prairie Section
- b Springfield Section
- c Western Section
- d Green River Lowland Section
- e Kankakee Sand Area Section

5 Upper Mississippi River and Illinois River Bottomlands Division
- a Illinois River Section
- b Mississippi River Section

6 Illinois River and Mississippi River Sand Areas Division
- a Illinois River Section
- b Mississippi River Section

7 Western Forest-Prairie Division
- a Galesburg Section
- b Carlinville Section

8 Middle Mississippi Border Division
- a Glaciated Section
- b Driftless Section

9 Southern Till Plain Division
- a Effingham Plain Section
- b Mt Vernon Hill Country

10 Wabash Border Division
- a Bottomlands Section
- b Southern Uplands Section
- c Vermilion River Section

11 Ozark Division
- a Northern Section
- b Central Section
- c Southern Section

12 Lower Mississippi River Bottomlands Division
- a Northern Section
- b Southern Section

13 Shawnee Hills Division
- a Greater Shawnee Hills Section
- b Lesser Shawnee Hills Section

14 Coastal Plain Division
- a Cretaceous Hills Section
- b Bottomlands Section

Figure 9.

Archaeological Regions and the Natural Divisions of Illinois (Downer n.d.:37).

Paleo-Indian Period (12,000 - 8000 B.C.): The Paleo-Indian period is generally defined by the presence of fluted lanceolate points. The extensive literature concerning Paleo-Indian socio-cultural patterns presents a picture of small egalitarian bands with a nomadic settlement pattern associated with a large game hunting and gathering tradition. Temporary camp sites and kill sites appear to compose the function/type associated with defined Paleo-Indian occupations.

With few exceptions, reviews of the prehistoric setting in the mid-west initiate discussion of the Paleo-Indian period or tradition with statements indicating that this component of the cultural sequence is poorly represented in the archaeological record. The GREAT III study area is no exception in that relatively little information concerning Paleo-Indian occupation is available. The recent Kimmswick excavations (Graham 1980) have, however, resulted in recovery of relatively strong support for an association of cultural materials with extinct faunal reamins on the border of the project area. Located approximately 20 miles south of St. Louis and 1.5 miles west of the Mississippi River, the "Kimmswick Bone Beds" produced 5 chipped stone Clovis artifacts including a Clovis point found beneath Mastadon bones during the 1979 excavations (Graham 1980:33). Dating, based on stratigraphic position of materials compared to radiocarbon dates from other terraces on the Mississippi, Missouri, and Meramec rivers (Goodfield 1965), indicate a date of 11,000 - 12,000 B.P. The site is located at the edge of the Ozark Highlands in what is considered an upland setting. This is in keeping with reports of Paleo-Indian manifestations throughout the general study area which generally associate these manifestations with uplands (Brown and Cleland 1968, Chapman 1975). With the exception of a single fluted point find by Smail (1951:13) northeast of Monks Mound at the Cahokia Site, little evidence of the presence of Paleo-Indian occupation in Mississippi River valley floodplain settings has been recovered. Chapman's review of Missouri Paleo-Indian data, while not explicit in terms of terrain/site location associations, suggests that most Paleo-Indian finds have been related to upland zones as opposed to major river floodplains. The predictive model investigations carried out for the Illinois Department of Conservation/Division of Historic Sites (DOC/DHS) (Brown 1981) produced similar results in terms of terrain/Paleo-Indian association in areas applicable to the GREAT III area: Where cultural affiliation was utilized as a variable a very low percentage of the defined Paleo-Indian occupations occurred along major rivers while a disproportionate number were located in upland settings including small stream valleys (cf. Asch et al. 1981, Williams and Woods 1981, Muller et al. 1981). Generally, it is argued that Paleo-Indian occupations are elusive, particularly in major stream valleys, as a result of time, population factors, and aggradation and degradation associated with major streams. This argument is quite likely the most effective interpretation for lack of floodplain Paleo-Indian manifestations: Although most defined Paleo-Indian sites are located in uplands immediately adjacent rather than at low elevations in the major stream valleys including the Missouri, Mississippi, and Ohio rivers, it would be expected that resources in these same settings would have been incorporated in the subsistence pattern of hunting and gathering bands. In other words, it is reasonable to assume that these groups were utilizing the floodplains and the only reason that they are so elusive in these areas is a result of voiding and burying by the extremes associated with floodplain evolution.

Given the paucity of information available concerning Paleo-Indian occupation of the GREAT III project area and the extensive interest as expressed by the hundreds of publications directed toward this early period, any evidence of Paleo-Indian occupation recovered within the GREAT III study area should be assigned a high preservation priority.

Dalton/Early Archaic (8000 -6000 B.C.): Not always included within Illinois local or general cultural sequences, the Dalton Period has been defined for Missouri as a transitional period between Paleo-Indian and the Archaic periods (Chapman 1975, Price and Krakker 1975). Of the defined occupations within the GREAT III study area, few Dalton sites are present. The occupation is defined by the presence of Dalton Serrated lithics often association with Planolike lanceolate forms (Chapman 1975). During this period, means of subsistence tended to be more diversified than during the earlier Paleo-Indian period resulting in establishment of a more varied set of ecological niches. The type of sites associated with this period are often temporary campsites, although there is evidence of somewhat more lengthy occupation of sites than for the earlier period (Chapman 1975). Dalton/Early Archaic sites apprear to be relatively well dispersed throughout the possible terrain settings in the GREAT III area including floodplain, terrace remnant, low rise in floodplain, old oxbow, and uplands. Early Archaic occupation of the GREAT III study area is generally diagnosed by the presence of Dalton Serrated, Graham Cave Notched, Hardin Barbed, Hidden Valley Stemmed, and Rice Lobed as well as a variety of biface scraper/ chopper implements (cf. Chapman 1975). It has been postulated that the Early Archaic was a development within an environmental situation complicated by a number of climatic shifts (Bryson and Wendland 1967) which necessitated an increasingly sophisticated seasonal pattern of food gathering activities when compared to the earlier large game/foraging tradition (cf. Kelly et al. 1979). Sites exhibiting Dalton/Early Archaic materials in the study area, with the exception of Modoc Rock Shelter, are usually defined by recovery of one or only a few diagnostic artifacts and little detailed information for the period is available (cf. Kelly et al. 1979).

Less than 1% of the sites recorded within the study area have been defined as Dalton/Early Archaic which strongly suggests that this period is in great need of data base expansion. Research in the general area has shown that by Dalton/Early Archaic occupation sufficient data may be present Which could more clearly define settlement pattern, site function, and other little known aspects of the period (cf. Price and Krakker 1975). The Dalton/Early Archaic occupation presents several avenues for investigation throughout the GREAT III study area including questions pertaining to environmental conditions during this early period, settlement pattern deployment, effects of Holocene environmental changes on cultural patterns and subsistence base to mention but a few of the possibilities. The Dalton/Early Archaic period, however, has not been defined in site context in the state of preservation which would be necessary for recovery of the substantial data set needed to answer these and other important research questions. Where Dalton/Early Archaic occupations are discovered, the manifestations should be considered very valuable resources in terms of potential to add to this little known period of occupation within the local and regional sequences associated with the GREAT III study area.

Middle Archaic (6000 - 4000 B.C.): The Middle Archaic was basically a continuation and expansion of a forager tradition begun in the Dalton/Early Archaic period. A drying climate forced greater reliance upon foraging or collecting vegetal foods and small animals as opposed to wet environment subsistence techniques. Sites continued to be small, exhibiting semi-nomadic or seasonal occupation with no specific topographic location associated (Chapman 1975:179). Floodplain Middle Archaic settlement has not yet been well defined in either Missouri or Illinois although scattered finds of diagnostics through the American Bottoms strongly suggest the possibility of Middle Archaic occupation within this setting (cf. Kelly et al. 1979: 19). In the upper Mississippi and Illinois valley portions of the project zone it is apparent that Middle Archaic manifestations are primarily associated with dissected uplands and are not represented along the Mississippi valley floor (cf. Asch et al. 1981:65, 68). With the exceptions of Koster and Modoc Rock Shelter, few Middle Archaic occupations have been relatively well defined in the GREAT III general area. The tool kit associated with Middle Archaic continued to expand from the postulated Early Archaic base and probably depended upon the extraction activity in specific niches. Diagnostics include Big Sandy Notched, Jakie Stemmed, as well as full-grooved axes and a variety of side notched and stemmed forms (cf. Chapman 1975, Fowler 1959, Houart 1971). To date, the greatest amount of information concerning Middle Archaic occupation along the Mississippi River has come from Modoc Rock Shelter (Fowler 1959) and the Faulkner site (McNeish 1948) in southern Illinois. The general lack of settlement data from controlled excavation of relatively undisturbed sites suggests that this cultural period should be given high priority in terms of preservation/mitigation when Middle Archaic can be defined. So little information is available that any research question pertaining to Middle Archaic occupation involving environmental affects, transition from Early Archaic, settlement-subsistence patterns, transition to Late Archaic, and others would greatly add to the understanding of this cultural period.

Late-Archaic (4000 - 1000 B.C.): The Late Archaic began toward the climax of a xenothermic warming period which reached its height around 2000 B.C. (Cleland 1966:20-25). The Late Archaic also represents the climax of the hunting and foraging / gathering traditions in many areas of the midwest. Population increased along with adaptation requirements as reflected in an expanding artifact inventory (cf. Chapman 1975, Griffin 1967). Emphasis was probably placed on a method of procurement which could effectively exploit various types of resources which were available in reliable quantities either on a seasonal basis or continually throughout the year. Using a type of adaptation referred to as "primary forest efficienty" (Caldwell 1958), a more restricted settlement pattern may have resulted, adjusting to what Meggers (1956) refers to as "Central-Based Wandering" in which the particular seasonal resources available would determine the type and location of temporary camps radiating from more permanent occupation sites (Ford 1974). This form of socio-economic structure would in theory have supported a larger population base than did the preceding periods. The greater population along with the more restrictive

settlement pattern resulted in more extensive and higher material density sites associated with several recorded Late Archaic occupations. In terms of defined Late Archaic sites within the project area, the percentage more than doubles when compared to the earlier periods. Given the somewhat larger sites and higher concentrations of materials expected as a result of postulated socio-economic and demographic factors, this increase should occur. As can be noted in Figure 6, complexes, aggregates, assemblages, and phases increase in the Late Archaic period. This is a result of regional variation as well as a reflection of the increase in amount of recovered data which allow for more detailed cultural delineations.

In the northern portion of the study area several assemblages have been defined (cf. Chapman 1975). Tentatively placed in the Sedalia phase by Chapman (1975), Etley Stemmed, Stone Square Sedalia Diggers, 3/4 grooved axes, Clear Fork Gouge, anvilstones, manos and metates are associated with the Late Archaic Booth site in Monroe County, Missouri (Klippel 1969). Similar diagnostics, with the addition of Red Ochre Lanceolate, have been associated with burial sites in Lincoln County, Missouri (Chapman 1975). The Titterington focus in Illinois further exhibits diagnostic similarities which extend southward and eastward into the St. Louis area, American Bottom (Kelly et al. 1979), and central Illinois (cf. Houart 1971). Late Archaic has been relatively poorly defined toward the southern extent of the project zone, particularly in the Mississippi Valley (cf. McNerney 1979).

Recognition of the diversity of Late Archaic materials is evident in American Bottom literature. Kelly (Kelly et al. 1979) discusses four Late Archaic complexes including Falling Springs, Titterington, Labras Lake, and Prairie Lake which exhibit side notched, corner notched, "dartpoints", and stemmed projectiles as well as a variety of manos, anvilstones, gouges, digging tools, and choppers that are defined as Late Archaic manifestations over regional and extraregional zones.

Throughout the general GREAT III area the preceramic cultures/ traditions, with some notable exceptions, have been the focus of less attention than later periods. The semi-nomadic to semi-sedentary settlement patterns resulted in low material density occupations and disturbance associated with greater antiquity in an unstable river setting have produced a more elusive data base than found for later ceramic cultures. Late Archaic does, however, exhibit more data than do the earlier periods as is evidenced in the increase in cultural delineations within the period and the doubling in the number of identified Late Archaic components. Although a central-based wandering pattern has been proposed for Archaic periods, the actual settlement pattern has not been well defined through intensive archaeological investigations, particularly the relationships of the camp component of the system to seasonal changes, terrain, length of occupation, subsistence activity, etc. Central bases have been identified in some instances but too little definitive analyses have been carried out to determine the environmental and cultural questions associated with this functional type. The shift from incipient domestication of plants to horticulture, initial ceramic technology, climatic affects on subsistence and settlement pattern can all be addressed by further investigation of the Late Archaic throughout the GREAT III study area.

Early Woodland (1000 - 500 B.C.): The Woodland period has traditionally been subdivided into three subperiods; Early Woodland (ca. 1000 - 500 B.C.), Middle Woodland (ca. 500 B.C. - A.D. 400), and Late Woodland (ca. A.D. 400 A.D. 900). The advent of ceramics to the technological base separates the Early Woodland from the preceding Archaic periods. Cultigens became a more important factor in subsistence in some regions and burial mounds had become an integral component of the mortuary system. The traditions associated with Early Woodland appear to have been an east to west moving phenomena with more representative sites with earlier dates occurring in Illinois than in Missouri.

Within the northern portion of the GREAT III study area a transitional Late Archaic/Early Woodland assemblage was identified by Klippel (1968, 1972a, 1972b) which consists of large Etley points, large laterally notched points, expanding-stem, straight-stemmed and slightly contracting stemmed points, along with groundstone axes, bannerstones and grinding stones. Without the presence of pottery on a site, however, this assemblage would be difficult to distinguish and is infrequently located within the area (cf. Angus 1975: 11-12). Although horticulture appears to have been practiced in some areas by this time period, as in the Adena area several hundred miles to the east (cf. Yarnell 1964, Tuck 1978), there is no definite evidence of incipient agriculture within the northern study area during the Early Woodland period.

The earliest Early Woodland occupations in the lower Illinois Valley, represented by Marion Thick ceramics, are virtually unknown (Asch et al. 1979). The Marion culture was defined by Munson (1966) in recognition of the coterminous distribution of Marion Thick ceramics and the Kramer point. Liverpool Stemmed and Dickson Broad Bladed (Gary) are also considered possible Early Woodland diagnostics (cf. Chapman 1980, Linder 1974). Within the American Bottom several sites have produced Marion cultural evidence (Kelly et al. 1979). Settlement pattern includes both uplands and floodplain occupation generally exhibiting low diagnostic material density (cf. Kelly et al. 1979). In the southern portion of the GREAT III Chapman suggests that there is too little evidence to define an Early Woodland occupation in this area of Missouri (Chapman 1980:16-18).

The terminal Early Woodland Black Sand Phase is the earliest well-documented Woodland occupation in the lower Illinois River valley. By this time local populations were producing pottery (Griffin 1952) of the Liverpool ware varieties. From excavations at the Peisker site in the lower Illinois Valley Struever (1968b) suggests that Black Sand populations in this region were exploiting a variety of floodplain fauna but that they did not overly depend on any one species. Charred nut shells were the only plant food remains recovered, which, at the time of writing (1968) were the only plant food remains recovered from a Black Sand component. More recent work (Asch et al. 1979) suggests that Black Sand populations were, to the contrary, quite selective in the plant food resources they exploited. The few Black Sand complex sites that have been investigated in Missouri in the general project area exhibit only probable ceramic evidence of the occupation although lithics fall within the range of Illinois valley materials (cf. Klippel 1972, Chapman 1980).

Although a larger of number of sites have been identified as Early Woodland in the GREAT III study area than have been identified at individual periods at earlier positions in the cultural sequence, Early Woodland adaptation patterns are not well known. The record is fragmentary and generally confused with Late Archaic and possibly early Middle Woodland. Definable strata has been recovered at very few sites in the general study area and a great deal of additional information would be required to reconstruct a viable Early Woodland cultural pattern. The period is very important in terms of questions pertaining to the incipient use of horticulture and the foundation for the cultural climax recognized for the Middle Woodland. Surface manifestations of Early Woodland should be given high priority in terms of determination of potential for presence of relatively extant subsurface cultural strata.

Middle Woodland (500 B.C. - A.D. 400): Defined as the first cultural climax in the midwest (cf. Kelly et al. 1979:25), the Middle Woodland cultures with main centers occurring in the upper Ohio and Illinois valleys have been subject to several interpretations in terms of origins, settlement pattern, mortuary practices, etc. (cf. Griffin, Flanders and Titterington 1970, Struever 1965; 1968a, Struever and Houart 1972, Chapman 1980). In addition, sequential statements including chronological/cultural divisions have varied. In general the Middle Woodland exhibits an elaboration of earlier patterns as reflected in stylistic changes in ceramics, the morturary system, and an extensive trade network of raw materials and finished products.

The Middle Woodland period is characterized by the introduction of new ceramic vessel forms and decorative techniques, projectile point forms, and a specialized blade/core tool production technique. In Missouri, a constellation of artifacts and attributes has been defined as exhibiting close resemblance to Middle Woodland assemblages from Illinois Havana and Crab Orchard Hopewellian traditions (Chapman 1980: 23). These, in turn, bear some similarity to Middle Woodland assemblages within the "Hopewell" category (Brose and Greber 1979). While it has become apparent that Hopewell is not the uniform, panregional tradition it was once thought to be, it is generally accepted that interregional contact may have been extensive between at least the larger centers as evidenced by exchange of exotic materials. This phenomena has been termed the "Hopewell Interaction Sphere" (Caldwell 1958). Within the northern Missouri portion of the GREAT III area there is some evidence of participation within the HavanaHopewell tradition notably at Creve Coeur (23MA3) and the Burkemper #2 site (23LN104) in addition to local Middle Woodland populations who apparently did not participate in the "Interaction Sphere" (Sturdevant n.d., Crampton n.d.).

Middle Woodland settlements in the lower Illinois valley are more frequent and larger than Black Sand occupations. Again, Middle Woodland habitation sites appear to have been restricted to the river valley itself. Middle Woodland ceramics from the lower Illinois valley are the archetypal Havana tradition Hopewell ceramics, Havana ware and Hopewell Ware (Griffin 1952a, 1952b). MontetWhite (1968) presents a detailed

description of Middle Woodland lithic technologies. Snyders, Gibson, Mankers, Dickson (Gary), and other projectile point forms are predominant. A well developed blade/core (prismatic blade or lamellar flake) technology appears. Asch (Asch et al. 1979:83) suggests that the highest level determinant of Middle Woodland habitation site location is proximity to a large, non-stagnant stream channel. In the Illinois valley, Middle Woodland sites are located at bluff bases where the Illinois River flows near the bluff base, or at the entrance point of large secondary creeks when the Illinois channel is not nearby. Middle Woodland sites also occur on natural levees or terrace margins adjacent to the modern river and adjacent to large secondary creeks meandering through the Illinois floodplain. Small Middle Woodland camps do occur well away from large permanent streams. Middle Woodland sites in the lower Illinois valley are generally accompanied by complexes of mortuary mounds, situated in the valley bottoms or on bluff tops. There appears to be a multi-tiered site habitation hierarchy and the largest sites are sometimes accompanied by geometric earthworks. Exotic trade goods are common. These, and other factors, led Struever and Houart (1972) to speculate that sites were differentiated economically within an "interregional exchange network"; this, as Asch (Asch et al. 1979) point out, remains unproven. Middle Woodland cultigens in the lower Illinois valley probably included sumpweed, sunflower, cucurbit (squash), goosefoot, knotweed, and maygrass (Asch et al. 1979).

The American Bottom exhibits concentrations of Middle Woodland activity but not in the intensity of occupation associated with the lower Illinois valley (Munson 1971, Harn 1971, Kelly et al. 1979, Porter 1963). Kelly notes that the area is virtually devoid of the elaboration associated with the Havana tradition to the north and Crab Orchard to the south (Kelly et al. 1979:25). Munson recovered evidence of Havana and Terminal Havana in the form of ceramics and lithics from 18 sites in the American Bottom (1971:7-9) and suggests presence of trade on the basis of nonlocal cherts and Crab Orchard sherds (1971:8).

Middle Woodland occupation of the southern portion of the GREAT III study area is marked by differences between regions. The west side of the Mississippi, showing few identified Middle Woodland manifestations from below Jefferson County, Missouri to the Bootheel, exhibit ceramic styles quite different than those occurring to the north in the Illinois valley and to the east in the Ohio valley which is reflected in the sequence terminology (See Figure 6). The Bootleel includes the Ten Mile Pond phase, although questionable (Chapman 1980:65), with the Barnes Ridge phase exhibiting unquestionable Hopewellian ceramics (Williams 1954:30). To the east the Crab Orchard Focus Hopewellian ceramics and burial influence (Maxwell 1952:185) is argued to be a result of imitative action rather than incipient Hopewell. Variation in the pattern is also present in the area in that Middle Woodland sites of Jefferson County, Missouri exhibit a much closer relationship to the northeast Illinois River valley than to the much closer proximity Crab Orchard complex (Blake 1942).

Following the extensive interest in the later more obvious Mississippian manifestations along the Mississiippi River, the Middle Woodland has recieved the greatest amount of attention. The cultural climaxes exhibited in the Middle Woodland and later Mississippian produced exotic and impressive artifactual and feature records that have been the center of attention of both archaeologist and layman alike. The interest has, however, tended to focus on the elaborate mortuary practices, some of the village centers, and inference regarding trade and diffusion. The role of cultigens in the development of the Middle Woodland has not been adequately addressed in terms of relationship to settlement pattern, assumed status differentiation exhibited through burial practices needs to be interpreted within the socio-cultural pattern context, settlement pattern involving the Mississippi valley has not been well defined even though a large number of Middle Woodland sites have been reported throughout the GREAT III area, and interpretation of the relationship of the transitions known within the major period have not been well supported by controlled archaeological data. These among a host of other questions should be addressed by further investigation of the Middle Woodland occupation of the GREAT III study area. The previously recorded site forms for the GREAT III area indicate a substantial increase in the number of Middle Woodland sites which total more than all of the identified earlier period sites. It is highly probable that the Middle Woodland data base present in the GREAT III contains sufficient information to greatly enhance the archaeological understanding of the rise and fall of an elaborate cultural adaptation pattern as well as its relationship to the less elaborate patterns that were coeval.

Late Woodland (A.D. 400 - A.D. 900): Late Woodland is generally interpreted as a period of decline between the Hopewell and Mississippian climaxes. Ceramic styles become less elaborate, burial complexes, while still present, are not as extensive, and settlement patterns appear to become less sedentary than those represented by the earlier Hopewell and later Mississippian in some areas. Introduction of the bow and arrow perhaps contributed to reshaping subsistence patterns as exploitation of a wider variety of fauna led to less domesticated plant dependence. At the same time, however, portions of the general area exhibit little change from earlier Middle Woodland patterns aside from reduction in elaboration of ceramic style and burial systems. It is also apparent that the agricultural base of the later Mississippian climax appears to have been initiated. Late Woodland sites range from villages and towns to scattered transient hunting camps throughout the GREAT III area. The settlement patterns hypothesized to exist are quite varied in the midwest and it is difficult to define a common thread between regional and local Late Woodland adaptation patterns aside from lithic and ceramic styles. It is apparent that centralization initiated in the Middle Woodland is built upon by Late Woodland cultures in some areas while a reduction in habitation size and more transient settlement patterns developed in other areas of the GREAT III. It is probable that a Great Tradition/Little Tradition dichotomy, long known from Chinese ethnographic and archaeological study, was in operation from the Woodland period through the Mississippian in that elaboration of culture through stratification, material goods, trade, etc. were the center property alone while marginal groups continued to develop along separate lines.

Late Woodland occupation of the lower Illinois valley has been referred to as the White Hall Phase (Fowler and Hall 1978). The characteristic ceramic ware for the lower, central, and upper Illinois drainage and west-central Illinois is Weaver ware (cf. Griffin 1952, Fowler 1955). These are generally cord marked, grit tempered ceramics with conoidal to subconoidal vessel forms with decorations generally confined to varieties of plain stamped or cord wrapped stick impressions on the exterior or interior of the rim/lip. Projectile point types include small arrowpoints of the Klunk side-notched, Koster side-notched or Scallorn-like forms. Early Late Woodland sites seem to be distributed in a pattern similar to that of the Middle Woodland period in the Illinois valley. A distinctly different pattern emerged during the latter half of the Late Woodland period (post A.D. 700) during which there is a dispersion of long-term base camps in the uplands away from the major river valleys. There is increased emphasis on seed plant cultivation during the early half of the Late Woodland period; maize occurs on most post A.D. 700 sites, gradually supplanting seed cultivation (Asch et al. 1979). Mortuary mounds are common throughout the Late Woodland period often along bluff tops. Interments, however, are less elaborate than those of the Middle Woodland Hopewell era with fewer or no burial goods (cf. Brown 1973).

In the northern Missouri portion of the study area Chapman and others (cf. Chapman 1948, Eichenberger 1944, Donham n.d.) have defined the Ralls phase as representing Late Woodland patterns. Ceramics are cord marked or smooth and grit tempered (Chapman 1948) and sometimes exhibit rim notching and punctates (Eichenberger 1944) with Scallorn Corner Notched projectiles predominating the lithics. Mounds produce a wide variety of interior structure patterns, grave offerings, and condition and placement of the body (Henning 1962). Suggested as similar to Jersey Bluff in Illinois (A.D. 750 - 1000), Chapman defines the Patrick phase as a late Late Woodland variant occurring in the St. Louis, Missouri area (Chapman 1980).

Early Bluff and Late Bluff (Munson 1971, Harn 1971) are the Late Woodland periods defined for the American Bottom area. Early Bluff (ca. A.D. 300 - A.D. 800) marks the decline of the Middle Woodland climax and Late Bluff (A.D. 800 - A.D. 1000) reflects the transition from Woodland to Mississippian (Kelly et al. 1979). Early Bluff ceramic assemblages are characterized by cord marked jars and bowls with rounded or tapered lips (Munson 1971) and lithic projectiles exhibit a reduction in size attributed to the introduction of the bow and arrow (Hall 1973). Burial tumuli and habitation sites occur on bluffs and terraces in the northern portion of the American Bottom (Munson 1971) while more extensive floodplain occupation is present to the south (Kelly et al. 1979:28-30).

Late Bluff is characterized by cord marked jars with plain, incurved necks, cord marked bowls, and stumpware as well as red slipped vessel forms (Vogel 1975). Lithics include small stemmed and triangular projectiles, discoidals, celts, and a wide variety of utilitarian tools (Kelly et al. 1979:31). Agriculture was present and increased socio-political complexity appears toward the end of the period in the form of larger settlements or towns and trade networks (Kelly et al. 1979:31).

In southern Illinois the Crab Orchard Focus apparently ended abruptly. The Late Woodland Raymond Focus which followed is characterized by grit tempered cord marked ceramics and postulated to maintain little continuity with earlier Crab Orchard (Maxwell 1952: 186). The Raymond Focus was followed by the Dillinger Focus, "a Woodland complex strongly influenced by Mississippian Culture" (Maxwell 1952:187). Agriculture played a role in subsistence while hunting was dominant. Pottery is "well made, predominantly grit tempered, cord marked, and appears in a variety of shapes" (Maxwell 1952:187). In addition, some shell tempered ceramics which appear to show close resemblances to Maple Mills and Jersey Bluff occur. It is suggested that because of these and other similarities with the Plattin phase in Missouri indicate Dillinger may be coeval with Early to Middle Mississippian (Maxwell 1952:188). The Late Woodland variants in the Mississippi Central area has been defined as an unnamed aggregate represented by Korando Cord Marked (Mulberry Creek Cord Marked) in the Missouri portion of this area of the GREAT III (Chapman 1980). The Bootheel has been subject to several interpretations based on ceramic types (cf. Chapman 1948, S. Williams 1954, J.R. Williams 1967 and 1974) which are subsumed under the heading Baytown and equated with Late Woodland (Marshall 1965). While ceramics are predominatly clay or grit tempered, cord marked, smoothed, and incised, an increasing percentage of shell temper and slipped pottery appears (J.R. Williams 1974). Large stemmed projectiles (Burkett and Gary) continue in small quantities and Mississippian triangular arrow points increase in numbers (Chapman 1980).

Within the GREAT III area the Late Woodland contains the largest number of defined occupations. While there is an increase in use of bottom lands associated with major streams, Late Woodland occupation has been recorded in all potential terrain settings in the study area. Given the number of identified Late Woodland sites it is somewhat surprising that the period has not been given more archaeological attention (see however IAS Bulletin No. 9, 1973). Research questions abound for the Late Woodland and include the need to interpret the settlement pattern and socio-cultural adaptation variation exhibited throughout the GREAT III area, the role of cultigens in reference to the settlement patterns, the nature of the change from Middle to Late Woodland, the inter-relationship between settlement types, role of trade in terms of Late Woodland variants throughout the area, as well as problems involving burial practices, presence of social stratification, and interregional ties. The quantity of identified Late Woodland occupations presents a setting from which important and definitive analyses may be carried out within the GREAT III study area.

Early Mississippian (A.D. 1000 - A.D. 1300): The Mississippian periods in the study area represent a climax and decline of cultural forms growing out of the Woodland periods. Agriculture became an important component of the subsistence pattern and camp/village/town settlement patterns expanded to include civic-ceremonial centers with fortifications, extensive trade networks, and a marked influence throughout the GREAT III area. Characterized by Kelly (Kelly et al. 1979:33) as a period representing the culmination of the socio-economic and political development begun in the late Late Woodland, the Early Mississippian includes the climax and fall of Cahokia and other great civic-ceremonial centers. The greater St. Louis area and American Bottom have produced an impressive array of data concerning Early Mississippian occupation. The extensive mound and civic-ceremonial center on the west banks of the Mississippi in the St. Louis area are primarily known only through historic records as a result of 19th century destruction (Chapman 1980:164-170). The American Bottom contains a vast amount of Early Mississippian manifestations exhibiting varying degrees of integrity. Research and interest in the American Bottom spanning over one and one-half centuries have allowed for detailed interpretations of local sequences and socio-cultural inferences generally not possible in other areas of the mid-west(cf. Hall and Vogel 1963, Hall 1964, Fowler and Hall 1975).

The northern Missouri portion of the study area has produced evidence of the Early Mississippian in the form of scattered diagnostic lithics and ceramics (Crampton n.d.). It is assumed the area was utilized but not in the manner exhibited by the great civic-ceremonial centers to the south. Generally sites in the northern areas of the GREAT III identified as Early Mississippian exhibit shell tempered ceramics and triangular "arrow points". Apparently, Woodland lifeways continued, outside of the greater St. Louis area, throughout the Mississippian period with only minimal influence from the large, nucleated, agricultural, stratified Mississippian tradition populations to the south and east.

The St. Louis, Missouri area has been summarized by Chapman to include the Fairmont, Stirling, and Moorehead phases (as derived from American Bottom literature). He further suggests that the great mound complex which was located in St. Louis, Missouri was closely related to the American Bottom complex (Chapman 1980:164). Preceded by an unknown phase (A.D. 800 - A.D. 900) (Loyd phase of Late Bluff - Vogel 1975), the Fairmont phase of the Early Mississippian (A.D. 900 - A.D. 1050) is indicated by ceramics including Powell Plain, Monks Mound Red, Cahokia Red Filmed, St. Clair Plain, Merrel Red Filmed, and Cahokia Stump Ware as well as by ceramics indicating trade ware (Fowler and Hall 1972). Burials included a variety of types (Baries 1963) and dwellings increased in size and construction type (Chapman 1980:170). It was during this period that the construction of Monks Mound and fortifications began. The Stirling phase (A.D. 1050 - 1150) was characterized by the completion of Monks Mound. Ceramics include Old Village pottery (Powell Plain and Ramey Incised) jar forms with rolled, extruded, and everted rims (Kelly et al. 1979). The Moorehead phase (A.D. 1150 - A.D. 1250) is denoted by shell tempered Cahokia Cord Marked, an early form of Wells Incised, and Tippets Bean Pot (Chapman 1980:173). The Trappist phase (Focus) (Sand Prairie phase)

(A.D. 1200 or 1250) probably marked the decline of Cahokia reign as a major Mississippian center by 1300 or before (Kelly et al. 1979) and is identified by presence of classic Cahokia Cordmarked jars with everted rim, Wells Fine Incised plates, fabric marked pans, Tippetts Bean Pot, and effigy-head bowls (Griffin 1949).

The Mississippi Valley Central Early Mississippian sequence includes the Plattin phase (Adams 1941) which is indicated by Korando Cord Marked, Westlake Plain, Ste. Genevieve Plain, stone box graves, and the Ste Genevieve civic-ceremonial center (Keslin 1964). The population also produced salt and were highly dependent upon agriculture (Chapman 1980). The Ohio River valley Dillinger Focus appears to represent a southern Illinois Early Mississippian phase located along the Kaskaskia, Big Muddy and Cache tributaries with attendant shell tempered ceramics (Maxwell 1952:188).

Early Mississippian expression in the southern portion of the GREAT III area was as elaborate in many ways as the American Bottom in Illinois in terms of civic-ceremonical center development and only lacked earthen structures on the magnitude of Monks Mound. Ceramics, burial patterns, and inferred socio-economic patterns exhibited very similar manifestations. Phases, foci, and assemblages in the Missouri Bootheel have been generated primarily on the basis of site-specific materials (See Figure 6). Chapman proposes a sequence for the area based on specific civic-ceremonial centers and their satellites which include Hunze, Peter Bess, Lakeville, Sandy Woods, Beckwith, Sikeston, Crosno, Towosahgy, Matthews, Lilbourne, Rich Woods, Wardell, Caruthersville, and Langdon. While differentiated in sometimes minor ways, the phases exhibit stone-box graves and Mississippian shell tempered pottery (Chapman 1980).

Middle Mississippian (A.D. 1200/1300- A.D. 1450): The change from Early to Middle Mississippian is primarily characterized by expansion of population and relationships between civic-ceremonial centers as well as the termination of Cahokia as a major center. New territory was colonized and civic ceremonial center mounds expanded in size along with public buildings and fortifications. Differentiation between Early Mississippian and Middle Mississippian is generally difficult to establish with certainty as a result of regional cultural developmental variability and coninuation of Early Mississippian cultural patterns.

In the northern portions of the GREAT III the Yokem, Crable, Fisher, and Schild sites have been identified as containing Middle Mississippian components (Perino 1971a, 1971b, Wray 1952). The St. Louis and American Bottom area is represented by the Sand Prairie phase which includes Cahokia Cord Marked, Tippetts Bean Pot, Wells Incised plates, Powell Plain bottles, effigy-head bowls, and fabric-impressed plates. By the initiation of the Middle Mississippian the Cahokia center had begun or had completed its decline from power over the area. The civic-ceremonial centers were not, however, remnants of the past. as centers flourished in the south and east.

In the Mississippi Central area of the GREAT III the Saline phase has been hypothesized to represent Middle Mississippian occupation (Chapman 1980). Redefined from the Kimmswick Focus (Adams 1941), the

Saline phase includes Raney Incised, Powell Plain, Cahokia cord Marked, St. Clair Plain, Kimmswick Facric Impressed, and Ste. Genevieve Plain salt pan ware as well as wall-trench house types. The Common Field Archaeological Site near Ste. Genevieve represents an example of Middle Mississippian civic-ceremonial center which was abandoned toward the latter part of the Middle Mississippian period (Chapman 1980). The Bootheel area patterns are presented by Chapman as similar to the Early Mississippian and characterized by Neeleys Ferry Plain, Grassy Salt Pan, Varney Red Salt Pan, Varney Red Filmed, Wickliffe Incised, Wickliffe Cord Marked, Wickliffe Plain, and cord marked Mississippian Plain ceramics (Chapman 1980).

Late Mississippian (A.D. 1300/1450 - 1600): The Late Mississippian period is given a wide range of dating depending on the area, drainage, investigator, and region and includes proto-historic and historic-contact groups. Agricultural societies exhibiting incised shell tempered ceramics and subdivided into Fort Ancient, Oneota, and Fisher occur in the mid-west with some examples marginally associated with the GREAT III area. The period presents a number of problems for chronological definition in utilization of Middle Mississippian, Late Mississippian, Proto-Historic, Oneota, and Historic to refer to the cultural patterns exhibited prior to any viable incursion by Euro-Americans into the Upper Mississippi valley. Review of the literature concerning Late Mississippian occupation strongly suggests that regional and inter-regional syntheses of data and interpretations of these data will be necessary to provide a definitive and acceptable discussion of the occupations possibly representing this period. Side-stepping these potentially important issues, if a lower date of A.D. 1400 is accepted for Late Mississippian the Oneota tradition is the only component represented in the northern half of the GREAT III study area. Oneota materials have been reported from Pere Marquette State Park excavations (Perino 1947) and from the Powell Tract at Cahokia (O'Brien 1972). To the south the Kincaid Focus (A.D. 1430 - A.D. 1613), defined by Maxwell as a Middle Mississippian period, exhibits characteristics similar to the Tennessee-Cumberland Aspect (Maxwell 1952:188-189, Cole et al. 1951). Historic occupation of the study area will be dealt with below.

The Mississippian occupation of the GREAT III area has received a great deal of attention and interest over a long period of time. The civic-ceremonial components of the period have received the majority of this attention and several aspects of the Mississippian cultures have yet to be adequately dealt with. The intensity of the investigative efforts and interpretations are beyond the purvue of the present report and suggestions for further investigations can only be generally addressed. Some specific problems noted during review of the literature include lack of definitive statements of relationships between hamlet-outpost and the major civic-ceremonial centers in terms of analyses of data recovered under controlled excavation. Since the centers depended upon the production and goods supplied by the farmsteads, outposts, and trading networks, these smaller manifestations could supply a much greater amount of data for interpretation of the socio-economic patterns of the Mississippian culture than have thus far been presented. While spacing studies have noted distance between centers and satellite communities in the American Bottom (cf. Porter 1974), additional questions involving temporal change in spacing would greatly enhance

interpretation of the climax and fall of the centers. Trade networks, while interpreted on the basis of exotic items and defined diagnostics from other regions, have not been adequately identified through extensive interregional comparisons except in a few cases. The role of the Steed-Kisker phase in the Kansas City area, while addressed by some investigators (cf. O'Brien 1978), has not been well defined in terms of its actual connections to the Mississippian centers in the American Bottom. Marginal zones of Mississippian occupation are present throughout the northern, central, and southern portions of the GREAT III study area which are defined by presence of shell tempered ceramics and Mississippian lithics. Although a few burial tumuli have been given intensive investigation, too few small habitation sites have been recovered and investigated to allow sufficient data for interpretation in terms of relationship to the major centers. Small outpost/camp sites which have been identified as containing Mississippian components should be considered highly significant resources in terms of their potential for increasing the limited understanding of total Mississippian settlement/influence spectrum. These as well as the region-specific questions prepared or under preparation through the Illinois and Missouri Historic Preservation Programs indicate a continued interest and need for further evaluation of the Mississippian components present within the GREAT III study area.

Historic Indians: The history of Native-Americans in the Mississippi valley during the seventeenth and the eighteenth centuries is a story of disruption, dissension, and decay. The decline of the Indian tribes which once inhabited the GREAT III regions resulted from a variety of factors, the most important being the impact of European intrusion into America and the decimation brought on by inter-tribal warfare, which was itself frequently caused by competing French and English colonial ambitions.

Within the midwest, a large number of Indian groups maintained permanent villages. In the area of present-day Illinois, the loosely organized Illini Confederacy, which included the Cahokia, Kaskaskia, Michigamea, Moingwena, Peoria, and Tamaroa tribes, remained dominant throughtout most of the historic epoch. According to Temple (1966:12), "the lands of the Illini in early historic times were bounded by the Wisconsin, Ohio, Wabash, and Mississippi rivers. At times they also lived in the present states of Iowa and Missouri." In the mid-seventeenth century, the Illini Confederacy reportedly included some sixty villages and was a powerful force in the Mississippi valley (Temple 1966:12-13).

But although numerous and potentially strong, the Illini Confederacy lacked cohesion and therefore proved unable to repel attacks from other Indian groups. In the mid-1600's the Iroquois began to invade the Illinois area from the east in search of beaver pelts and probably emboldened by the plentiful supply of weapons from their European trading partners. By 1660 the Illini had retreated westward across the Mississippi River (Temple 1966:13).

Later in the 1660's, the Iroquois shifted their attention elsewhere and the Illini began slowly moving back across the Mississippi to their

traditional village sites, but according to Jesuit missionaries, the wars with the Iroquois had "well-nigh exterminated" them (Thwaites 1896-1901:LI,47). Unfortunately for the Illini, the Iroquois withdrawal was not permanent, and for the next century there was a succession of conflicts which left the Mississippi valley tribes weakened and vulnerable.

Furthermore, the Illini Confederacy suffered raids and wars with other Native-Americans which were possibly even more destructive than their troubles with the Iroquois. By the early eighteenth century, the Sioux were sending war expeditions down the Mississippi River to engage the Illini; according to Auguste Chouteau, the Sioux dealt the most severe blow to the power of the Illini Confederacy (Foreman 1940:135). In addition, the Illini became involved in a struggle between the French and the Fox nation and thereby gained the enmity of that tribe, which further added to their problems (Temple 1966:37).

The Illini Confederacy's wars with the Fox reveals the negative impact which came from their contact with Europeans. Exposed to European diseases for which they had no natural immunities, enticed by European trade goods, and armed with the more efficient European weapons of war, the Illini, as well as most other American Indian tribes, lost strength and participated in their own destruction. And European nations in search of wealth and empire enlisted their Native-American allies in wars of conquest and retribution against other Indian tribal units, adding to the strength of the Europeans and weakness of the Indians.

However, the Europeans cannot take sole blame for the disintegration of the Illini Confederacy, which always lacked the structure and cohesion necessary to defend itself from its enemies. In fact, in the late seventeenth century La Salle actually contributed to the development of a stronger confederacy, even though it was designed to help fulfill French dreams of empire in the Mississippi valley. Around his fort at Starved Rock, La Salle gathered a formidable array of Indians to aid in defense of the Illinois region and to serve as fur trappers for French commerce. In 1684 there were nearly 20,000 Indians settled around Fort St. Louis at Starved Rock, which included the Kaskaskia, Moingwena, Tamaroa, Peoria, Cahokia, Miami, Mascouten, and Shawnee (Temple 1966:27).

As allies of the French, the Illinis were inevitably drawn into the colonial wars between the French and the English, and eventually found themselves allies to the vanquished and their once numerous population so severely reduced that they could no longer resist encroachment. When the British came into the Illinois area in 1765 they counted 150 warriors among the Kaskaskia, 250 among the Peoria, 40 for the Michigamea, and only 40 Cahokia warriors (Temple 1966:49).

During their time of pre-eminence in the Mississippi valley the members of the Illini Confederacy occupied numerous village sites, although apparently they frequently moved to avoid destruction at the

hands of other Indian tribes or to take advantage of European trade opportunities and military protection. The major areas of settlement included the area around Starved Rock, Lake Peoria, Kaskaskia, and Cahokia (Temple 1966:45). However, other villages were situated along the Illinois River and at one time a small Illini village was located at the mouth of the Ohio River (Temple 1966:52).

Settlements on the west side of the Mississippi were usually temporary and therefore difficult to locate with precision. During the eighteenth century the Iliniwek moved across the river more premanently, but that was usually in response to the establishment of French settlements such as at St. Louis and Ste. Genevieve and cannot be truly seen as independent Native-American culture sites. In fact, the connection between the French and their Indian allies was so strong that when the French ceded the territory east of the Mississippi to Britain in the Seven Years' War, the Illini often moved westward with the Europeans (Temple 1966:49).

In the early 1800's, the once-strong Illini Confederacy was gone, and the remnants ceded their lands to the United States in return for reservation lands in Jackson County, Missouri and Kansas.

County histories, oral traditions, military records, settlement records, explorers' maps, and trading concern records indicate an extensive amount of Indian movement and occupation in th GREAT III area during the late 1700's and early 1800's. Surprisingly little physical evidence of the historic Indian occupation of the area has, however, been reported. The Pleithmann maps (on file SLC) show Michigamia village and cemetery sites near Fort De Chartes, historic sites are noted in county histories within the northern half of the American Bottom, and the historic Euro-American maps compiled by Tucker (1942) and Temple (1975) indicate general locations of several historic Indian sites within the GREAT III study area. Historic Indian populations, however, were relatively transient and lack the more lengthy habitation/utilization of areas exhibited by prehistoric occupations. Archaeological data recovery of historic Indian occupation is thus a difficult and generally unrewarding venture even with the additional record/literature data base.

The CRM's reviewed during the present investigation usually note historic Indian occupation as a cultural sequence category. In several instances historic documentation has suggested the possibility of presence of an historic Indian site within or near a project area. In all instances evidence of the occupation has not been recovered although several possible historic Indian artifacts have been reported with problems of provenience (cf. Kelly et al. 1979).

The historic Indian period is a difficult phenomenon to deal with archaeologically. On the one hand, literature sources suggest site presence while the short time duration precludes placement of an adequate corroborative physical data base in the GREAT III area. In some respects the historic period is as elusive as the Paleo-Indian period for the archaeologist. Any evidence of historic Indian occupation should be considered highly significant in the GREAT III study area.

Mississippi Valley Under French and Spanish Rule

Throughout man's occupation of mid-America, the Mississippi River has played an important role in the social and economic activities of the region. Because of the natural advantages for transportation and communication, as a supply of water, and in the provision of food, population traditionally tended to concentrate along the banks of rivers. The Mississippi, the world's third largest river basin, became a focal point for human activities in the interior of the continent.

When the Europeans began to penetrate into the interior of America, the Mississippi (an Ojibwa Indian term meaning "great river") presented both problems and possibilities. The tumultuous nature of the river, especially below its confluence with the Missouri, made navigation hazardous. But at the same time its size and volume at first promoted hopes that this river was the fabled Northwest Passage, and later on the Mississippi provided a direct commercial link to New Orleans and the Gulf. Its character impressed all observers. Timothy Flint's History and Geography of the Mississippi Valley (1832) noted the transformation which occurred in the Mississippi River when it combined with the Missouri and remarked that above that point

> It is a still more beautiful river than the Ohio, somewhat gentler in its current, a third wider, with broad and clean sandbars. . . Altogether, it has, from its alternate bluffs and prairies, the clamness and transparency of its waters, the size and beauty of its trees, an aspect of amenity and magnificance, which perhaps, does not belong in the same extent to any other stream.

While below the confluence of the Mississippi and Missouri Rivers, it

> has a furious and boiling current, a turbid and dangerous mass of sweeping waters, jagged and dilapidated shores, and wherever its waters have receded, deposites of mud. . . The bosom of the river is covered with prodigious boils, or swells, that rise with a whirling motion, and convex surface, two or three rods in diameter, and no inconsiderable noise, whirling a boat perceptibly from its track. In its course, accidental circumstances shift the impetus of its current, and propel it upon the point of an island, bend or sandbar. In these instances, it tears up the islands, removes the sandbars, and sweeps away the tender, alluvial soil of the bends, with all their trees, and deposites the spoils in another place (Flint 1832:92-93).

But the Mississippi as first viewed by European explorers is a rather recent creation in geologic time. Current theories suggest that the great river basin was created by a series of glaciers which moved southward approximately one million years ago. The last of these, the

Wisconsin sheet, descended to a level about midway through what is now Missouri. The glaciers altered the paths and direction of the Ohio and Missouri rivers, both of which has probably flowed northward prior to that time. The ice melt which accompanied the retreat of the glaciers dramatically increased the quantity of water which flowed down the Mississippi and created a broad floodplain. The river system which resulted from that geologic activity became a dominant feature of the mid-continent. Over one-half of the population and sixty-five percent of the United States' improved agricultural land is now contained within the Mississippi basin.

The Europeanization of mid-America, a process which consumed nearly three hundred years, transformed the region. The forests were cleared, the lands brought under plow, the rivers tamed, and cities grew. It began slowly, with penetration by Spanish explorers in the sixteenth century. In 1528 Panfilo de Narvaez led an expedition of 300 men inland from Tampa Bay in search of gold. He failed to find easy riches but did make entry in his journal sighting "a broad river" which flowed into the Gulf (Jameson 1907:41).

Then in 1539, Hernando de Soto led an expedition from Florida into the interior. At what is now Tennessee, de Soto and his followers encountered the Mississippi River. No colonization efforts came from that discovery however, and in fact, "The discovery of the Mississippi River was ironically the end of Spanish colonization efforts for almost 200 years" (Dobney 1978:3).

Although the Spanish were the first Europeans to enter the Mississippi Valley, their explorations failed to uncover gold or silver and discouraged colonization efforts in that region. One author has noted that "Mexico and Peru became the focal points of Spain's thriving colonial empire in the sixteenth century, while immense stretches of the North American continent. . . remained unoccupied by Europeans" (Foley 1971:237).

It was the French, in the seventeenth century, who first truly explored the Mississippi and established the European influence in the valley. Whereas the Spanish had entered from the south, the French came down from their Canadian colonies. Quebec, established in 1608, began French settlement in North America; by mid-century missionaries and fur traders had spread throughout the Great Lakes, had developed profitable commercial contact with the Indian population, and had heard stories of a great river to the south.

French officials, hopeful that this "Mesippi" river would prove to be the fabled Northwest Passage to the Orient, commissioned a local trapper and explorer Louis Jolliet to locate the river and determine if it did indeed flow to the west. In May 1673, Jolliet and his partner Father Jacques Marquette, who was considered an expert in Indian languages, began their journey to explore the Mississippi. By mid-July, they had descended as far as Arkansas and realized that the river emptied into the Gulf rather than turning eastward to English Virginia

or westward to the California Sea, and so returned to Canada (Howard 1972:27).

The first European to travel the length of the Mississippi was Rene Robert Cavalier, Sleur de La Salle, who had emigrated to Canada in 1668. In pursuit of adventure and profit, La Salle advanced French territorial claims in the Mississippi Valley, and in April of 1682 claimed the river and all lands which it drained for Louis XIV (Foley 1971:3). La Salle named the land Louisiana in honor of his king, and apparently hoped to become its governor. His hopes for wealth and glory from Louisiana were short lived. He directed the construction of Fort St. Louis on Starved Rock on the Illinois River for collection of furs from the Indians, but La Salle was killed by his own men in 1687 while leading an expedition which sailed from France to ascend the Mississippi River from its mouth but landed instead in Texas (Howard 1973:3).

The French continued their activity in the Mississippi Valley well into the eighteenth century. For the most part, they were motivated by "missionary zeal, the search for precious metals, interest in expanding the fur trade, and a desire to discover a passageway to the Pacific that would open trade with the Orient" (Foley 1971:3). Many of the early French settlements in the Illinois country resulted directly from the efforts of Catholic priests who hoped to convert the Indians to Christianity. In 1699, the Mission of the Holy Family was established on the American Bottoms and later became known as Cahokia. At the lower end of the Bottoms, Father Gabriel Marest erected a mission to serve the Kaskaskia Indians in 1703. That settlement took the name of the tribe and became the economic and cultural center of French influence in Illinois for nearly 100 years (Howard 1972:36-37). The French Catholic priests also began the village of Cahokia (1699).

The missionary activities of the French priests assisted the small but growing French influence in the Mississippi Valley. They participated in the mapping of the rivers and the interior, recommended locations for military outposts, helped maintain friendly relations with the Indians, and provided a haven of French civiliation for the traders and trappers of the valley.

Another source of French influence and settlement in the Mississippi Valley was the search for mineral wealth. In 1715, Antoine de La Mothe Cadillac, the Governor of Louisiana, personally headed an expedition in a quest for silver. Cadillac's expedition went to Kaskaskia and from there crossed the Mississippi and began exploratory mining on the west side of the river (Foley 1971:7-8). That unsuccessful expedition was part of Cadillac's scheme to promote settlement in Louisiana. He had, some years earlier, convinced the wealthy French merchant Antoine Crozat into financing settlement in exchange for a monopoly on trade and mining. In 1717, disillusioned by the failure to find precious metals and the enormous costs of promotion, Crozat withdrew from his agreement to support development in Louisiana (Foley 1971:8-9).

Crozat's failure convinced the French government that the problems

and costs of developing Louisiana exceeded the resources of one individual and therefore, created the Company of the West. It, in turn, became part of John Law's new trading company, the Company of the Indies, in 1719. Launched with great optimism and accompanied by grand projections of potential riches, the Company of the Indies induced wild speculative excitement in France. With a twenty-five year monopoly on trade in the Mississippi Valley, ownership of all mines, special reductions on import duties, control of all patronage positions in Louisiana, and the power to dictate Indian and commercial policy, the Company promised much but delivered little (Howard 1972:9). A monopoly on trade produced meager profits in the sparsely populated Louisiana country, and commercial policy without commerce brought no magical growth and prosperity.

Essentially, success for the Company of the Indies and for French efforts to develop the Mississippi Valley depended upon the discovery of minerals or the production of a highly profitable product in the region. In regards to the latter, Law envisioned a series of cities along the Mississippi River engaged in weaving cloth from buffalo hair (Howard 1973:9). The search for mineral wealth brought Phillippe Renault to Louisiana in 1720 with fifty miners and a small number of African slaves. They had a measure of success working the lead deposits southwest of the Meramec River and at Mine La Motte in what is now Missouri, but were impeded by poor transportation and a complex marketing system. "They extracted, melted, and molded the lead. Hauled to the river in wagons pulled by oxen, the lead was then loaded on a barge and shipped upriver to Fort Chartres in Illinois, the company headquarters. There it was weighed and reloaded on barges bound for New Orleans" (Parrish 1980:23-24).

For the most part, the Frenchmen who came to work in the lead mines resided on the Illinois side of the river. Ste. Genevieve, settled in the 1730's, was the only exception. "Apparently, Ste. Genevieve served the needs of the limited French population on the Missouri side, which by 1745 was estimated to be only three hundred" (Gerlach 1976:10). The rugged, inhospitable land around the mines discouraged farmers and extensive settlement, and for thirty years Ste. Genevieve remained the only permanent village in the vicinity of the mining district.

The lead mines undoubtedly contributed to settlement and development in the region, but growth in the first half of the eighteenth century was slow. In 1744, Renault, discouraged by rising debts, difficulties with the Fox Indians, and the failure to find silver, abandoned his mining operations and returned to France (Parrish, et. al. 1980:24). Although Missouri's lead mines remained in operation and eventually produced substantial wealth, it came too late to save the Company of the Indies or French dreams of empire in the Mississippi Valley.

The Seven Year's War, known in American history as the French and Indian War, brought to an end French control of the Mississippi. In the

Treaty of Fontainebleau (1762) France ceded all of Louisiana west of the Mississippi to Spain in return for military assistance against the English. Spain was quickly defeated by England but retained possession of western Louisiana. In the Treaty of Paris (1763) which ended the Seven Years' War, England obtained Canada and all of Louisiana east of the Mississippi (Parrish, et. al. 1980:25).

One significant event coincided with the French loss of Louisiana: the founding of St. Louis. Unaware of the territorial cession to Spain, in 1763 the French governor granted a monopoly of the fur trade in Missouri to Maxent, Laclede and Company, a partnership between Gilbert Antoine Maxent and Pierre Laclede Liquest. Maxent, a wealthy New Orleans merchant, provided the capital, while Laclede was to construct a trading post and begin trade with the Indians (Dobney 1978:9).

In the summer of 1763, Laclede, accompanied by his wife and his thirteen year old adopted son Auguste Chouteau, began their journey up the Mississippi from New Orleans. After stopping in Ste. Genevieve, they arrived at Fort Chartres in the Illinois country in November, stored their provisions and trade goods, and the following month crossed the river to choose a location for their trading post. Laclede made a superb choice. "The village they named for King Louis IX of France was built on a limestone bluff jutting up from the Mississippi. Not only was this site safe from the ravages of the rampaging river, but it also stood upon the first elevated spot south of the junction of the three great rivers, the Illinois, the Mississippi, and the Missouri" (Dobney 1978:9).

Following Laclede's instructions, young Chouteau actually supervised construction of the St. Louis trading post, a stone building, as well as several log houses surrounding it (Parrish, et. al. 1980:25). Although the population of St. Louis grew slowly, it became the seat of Spanish government in Louisiana, and its natural advantages made it well-suited for trade and commercial activities in later decades. A significant shift in population to the west bank of the river followed the cessation of the Illinois country in 1763. French residents, unwilling to live under English rule and unaware that western Louisiana had been granted to Spain, moved across the river, especially around Ste. Genevieve, St. Louis, St. Charles, and the Missouri lead mining district. New French settlements established in Missouri in the late eighteenth century included Portage des Sioux (1779), L'Anse a la Graise (1783), Florissant (1786), New Bourbon (1793), and Cape Girardeau (1793) (Gerlach 1978:11). Laclede, attempting to secure the future of St. Louis, actively recruited settlers from the French settlements east of the river (Foley 1971:18). Further evidence of the population shift which followed the Seven Years' War can be seen in the population figures for the Illinois country. At its peak in the mid-eighteenth century, the French in Illinois probably numbered between 1,500 and 2,000, including soldiers and government officials, with most of those concentrated in the American Bottom. In 1800, after American migration from the east was well underway, the Illinois Territory contained only 2,458 persons (Howard 1972:39, 70).

English acquisition of the Illinois country brought new settlement and new plans for wealth. In October of 1765, Lieutenant James Eidington, a member of the English occupation force, noted that the Indians had a "great regard" for the French, "who have no doubt used every method to prevent the English getting possession of the Illinois country; from whence. . . almost. . . one-third of the fur trade of North America centers. . ." Regarding the settlements in the region, Eidington also commented that "the French have dispersed themselves through the country in several small villages, and have several small Forts, that is to say at the Chief of their towns. . ." (Carter 1907:202).

The fur trade certainly offered opportunities for English investors, but for the English, and especially for the colonists along the Atlantic seaboard, the fertility of the soil and access to the Mississippi River proved a major attraction. General Phineas Lyman of Connecticut proposed colonizing the new British lands in the west and requested land grants for veterans of the French and Indian War. His company of 4,320 former soldiers and officers asked for land at the confluence of the Ohio and Mississippi River as a reward for their military service, but the British government refused the request (Alvord 1920:288-289).

Other proposals for settlement came from within the British government itself. In 1766, the Secretary of State for the Southern Department, Lord Shelburne, advocated colonization in the west and public sale of the land, a plan which he thought would bring military advantages by populating the area, and also raise revenue for the heavily indebted government. Difficulties between the royal government and their opposition of Prime Minister Charles Townshend discouraged British colonization plans (Alvord 1920:290-291).

The Mississippi Land Company, organized in 1763 by a group of Virginia speculators, illustrates another approach to English settlement in the west. That group of Virginians, which included Samuel, George and John Washington; William, Thomas, Francis, Richard, and Arthur Lee; Henry and William Fitzbugh; Presley Thornton, and Benedict Calvert, petitioned the King for a grant of nearly 2,500,000 acres on the Mississippi River. Their petition claimed that promotion of settlement would lead to increased trade, greater tax revenues, and also create a buffer zone between the eastern colonies and their western enemies (Alvord 1920:287-288). Government opposition to private land speculation companies in the west caused the rejection of the petitions of the Mississippi Land Company and others, but the proposals reveal and interest in developing the area for profit. That interest was eventually expressed in the large-scale migration into the Mississippi Valley in the early nineteenth century.

Population movement into the Illinois country actually became significant in the last decade of the eighteenth century. In 1787, the United States government enacted the Northwest Ordinance which provided for surveys, public sale of the land, and prohibited slavery in the territory. In the same year, Arthur St. Clair was appointed territorial governor, and in 1790 organized St. Clair County in the Illinois country.

By 1795, population had increased sufficiently to justify creation of the County of Randolph. At that time, Randolph County encompassed the area south of a line through New Design from the Mississippi River, while St. Clair County lay north of that line (Blanchard 1883:47).

On the western side of the Mississippi River, Spanish control and development of the upper Louisiana Territory grew slowly. It was a large region with a sparse population, and much of that was composed of trappers, traders, and boatmen rather than settled farmers such as found so prominently in the English settlements. Furthermore, most of the population was French, whose allegiance to the Spanish government rested mainly on their common animosity for the English. One Spanish official commented that there were never more than six or seven Spaniards in Ste. Genevieve (Parrish, et. al. 1980:29). Although Spanish was the official language, French remained dominant in both commercial and social communication, and some Frenchmen even served in the Spanish colonial government. Agricultural practices also remained distinctively French, with each village setting aside a common field ("Le grand champ"). Ste. Genevieve's encompassed several thousand acres, with each family owning rights to one long strip of land running inland from the river (Parrish, et al. 1980:27). The Spanish government attempted to attract European Catholic immigrants to Louisiana, especially from Spain, France, and Italy, but had little success other than a group of French royalists who fled the French Revolution and established New Bourbon in 1793.

In 1797, the Spanish government in Louisiana relented and began allowing the restless Americans to settle west of the Mississippi River. Among the early immigrants was Moses Austin, who obtained land in the lead mining district and built the first shot tower west of the river (at Potosi). He later obtained a land grant from Mexico to lead an American colony to Texas (Gerlach 1978:15, 18).

To some extent, Spanish acceptance of American emigrants stemmed from their desire to increase population and wealth, and thereby secure more firm control over their Louisiana territory, along with their failure to attract appreciable numbers of European emigrants. But in addition, the War for Independence produced an alliance between Spain and the new United States. French inhabitants, with a long-standing dislike for the British, also gave assistance to the Americans, especially after France entered the war in 1777.

The most widely remembered military campaigns during the war occurred in the east, but the struggle for control of the Mississippi River was an important part of the contest between Britain and the United States. In 1778, General George Rogers Clark, with the assistance of local French inhabitants, captures Cahokia, Kaskaskia, and Vincennes. Although the British regained control of Vincennes for a few months, Clark's forces re-established their dominance in 1779 (Billington 1963: 181). Following Spanish entry into the war in 1779, British launched an attack against St. Louis in order to gain control of the Mississippi River. In a battle on May 26, 1780, Spanish troops, assisted by local

French inhabitants, fought off an assault by British soldiers and their Indian allies, and thus ended the threat to the Mississippi Valley (Parrish, et. al. 1980:31).

The French, then, remained the dominant force on the west bank of the Mississippi until the Louisiana Purchase of April 30, 1803, when Napoleon sold the territory to the United States only three years after reacquiring it from Spain. Many of the villages which later became centers of American population in both Missouri and Illinois grew from early French beginnings. French architecture remains visible in some of those old settlements, with some particularly good examples still extant in Ste. Genevieve. One notable feature of French construction was the "poteaux en terre," in which logs were set vertically rather than horizontally as was the common practice among American settlers. The vertical logs "were driven several feet into the ground, resulting in eventual rotting of the lower sections. This may well account for the few examples of this type of architecture to be found today" (Gerlach 1976:20). The Bolduc house in Ste. Genevieve is one particularly good example of early French architecture.

In addition to the establishment of numerous viable settlements and the legacy of a valuable historical tradition, the French truly gave the Europeans their first view of the Mississippi Valley. Traders and trappers explored the river and its tributaries, and extended the range of contact with the Indian population. Farmers, particularly in the American Bottoms, provided first-hand evidence of soil fertility and the promise of bountiful harvests, their crops supplying food for the growing urban centers throughout the valley. And it was the French who first began using the Mississippi River as a commercial thoroughfare, shipping lead, furs, foodstuffs, trade goods, and people along the waterway.

But is seems that neither the French nor the Spanish made concentrated efforts to develop and populate the American interior. The French, although occasionally lured into schemes for quick riches such as John Law's "Mississippi Bubble," possessed other, more profitable colonies which seemed more deserving of their attentions. And they were furthermore embroiled in seemingly endless "wars for empire" with the English during much of the eighteenth century. The Spanish, during their administration of Louisiana from 1762 to 1802, promoted settlement in the region but clearly believed Mexico to be of greater value and therefore concentrated their efforts to the South (Dobney 1980:10). Although the French contribution to the development of the Mississippi Valley should not be understated, by the early decades of the nineteenth century both Illinois and Missouri experienced the push of westward migration, and the Gallic influence was relegated to a minority status.

Settlement - Growth in the Nineteenth Century American Period

Provisions of the Treaty of Paris (1783), which ended the American War for Independence, coupled with the Louisiana Purchase (1803) gave

the United States title to the Mississippi Valley. Between those two dates population grew steadily but not spectacularly. In 1800, Illinois contained only about 2,500 persons, half of whom were of French descent (Pease 1949:48). In the same year Missouri's population was nearly 7,000 (Anderson 1956:150). Fredrick J. Dobney believes that "The clear superiority of the Missouri side of the river for commerce (especially St. Louis) explains why by 1800, it had outstripped Illinois in terms of population (Dobney 1978:12). Probably the constant westward shift of the fur trade, the expansion of the Missouri lead district, and the French migration across the river in the years after 1763 contributed to Missouri's population growth.

From 1804 to 1810, following the transfer of the Louisiana Territory, Missouri experienced substantial immigration and by the latter year claimed a population of 19,783 (Anderson 1936:151). But population growth in both Illinois and Missouri began its major surge following the War of 1812. Between 1815 and 1830, most immigrants to the region came from the upper South. According to historian Ray Allen Billington:

> Disturbed social conditions there hurried them westward. Many were seasoned pioneers from Kentucky and Tennessee who, having been held back by a generation of Indian warfare, now resumed their advance. Many were small farmers driven from their southern homes by the rapid extension of the plantation system, which engulfed the western Carolinas, Georgia, and eastern Tennessee during the postwar years. Some from those regions sought homes in the Northwest because their dislike of slavery made life amidst bonded labor unpleasant, others because the aristocratic social distinctions inherent in the plantation system were distasteful to their democratic instincts, and still more simply because their lands were absorbed by richer plantation owners (Billington 1963:294).

Along the Wilderness Road and the National Road, as well as numerous territorial roads which were little more than trails which had been cleared of tall stumps, down the Ohio River and up the Mississippi, immigrants poured into the new lands. Most headed towards the old towns of Kaskaskia, Cahokia, St. Louis, and Ste. Genevieve, where they found a ready welcome and an abundance of government land for sale. Contemporary observers were amazed at the magnitude of the migration. One immigrant who was travelling the National Road in 1817 commented that "Old America seems to be breaking up and moving westward. We are seldom out of sight, as we travel on this grand track, towards the Ohio, of family groups before and behind us" (Birkbeck 1818:25). While in the same year the Niles' Register remarked that "So great is the emigration to Illinois and Missouri . . . that it is apprehended that many must suffer for want of provisions the ensuing winter" (Boggess 1968:119). As the population increased, lands along the rivers were cleared and put under plow, and towns filled with a restless, acquisitive class of citizens. In 1818, St. Louis organized an emigrant aid society,

especially for the Germans and Irish, "to prevent them from falling into penury and vice," and in the same year the city's growing labor force created the St. Louis Mechanics Benevolent Society (Anderson 1936:167).

The journey westward was difficult and long. John Mason Peck travelled with his wife and three children from Litchfield, Connecticut to St. Louis in 1817, taking nearly one month to cross Pennsylvania, three weeks to pass through Ohio, and finally arrived at their destination over four months after they began (Boggess 1968:124-125). A German immigrant commented that the journey from an Atlantic seaport to Illinois "is often as costly and tedious, for a man with a family, as the sea passage. Any father of a family, unless he is well-to-do, can certainly count on being impoverished upon his arrival in Illinois" (Boggess 1968: 126).

Development of the steamboat greatly facilitated the flow of migration into the Mississippi Valley. Although the first steamer arrived in St. Louis in 1817, not until the 1820's were they of sufficient regularity and economy to carry an appreciable numer of emigrants. But by 1841, George Flower, an Englishman who helped lead a colony of English settlers to Albion, Illinois, advised his former countrymen that "If Arkansas, Missouri, or the south of Illinois are either of them selected for further residence, the route by New Orleans is decidedly the most convenient. The arrival at New Orleans should take place between November and June inclusive, on the score of health and for ample choice of steam-boats to the upper country" (Flower 1841:9).

Flower, a gifted observer of customs and habits, filled a volume with advice for prospective emigrants to America, discussing the type of land to choose (prairie), the disadvantages of purchasing too much land, the unexpected extremes in temperature which one encountered in the new country, and the "unfounded fears of robbers, savages, and wild animals." He further noted that, in America, "Land is cheap, and labour dear, we therefore use land plentifully and labour sparingly. We plant on the same piece of ground until its virgin strength is exhausted. We seek not to retain its fertility, but received from it all that it will give, and then go to another piece and do the like." And "all operations which time and weather can perform are left to them. . . This gives to the exterior of our farms and farm buildings a very slovenly appearance. The weeds are suffered to take possession of the garden which has yielded its abundant crop of vegetables. The old and abandoned building is suffered to drop to pieces for want of time to take it down" (Flower 1975:32-33).

Settlers in Illinois and Missouri, whether foreign-born immigrants or easterners seeking new, cheap lands, usually travelled down the Ohio River, "the grand thoroughfare to all the western states" (Flower 1975:9), and then the Mississippi. Frequently three or four families collectively purchased an ark for the river voyage, "flat-bottomed boats of a tonnage of from twenty-five to thirty tons, covered, square at the ends, of a uniform size of fifty feet in length and fourteen in breadth, usually sold for seventy-five dollars" (Boggess 1968:125-126). Certainly, a portion of the immigrants used horses, carts, wagons, or even walked to

the west, but the rivers provided relatively easy and inexpensive transportation and were utilized by all but the poorest settlers.

In addition to their importance as an aid to migration, the rivers provided easy access to markets, a primary consideration for the new westerners who had endured hardships in anticipation of economic rewards. Prior to the construction of railroads and canals, the Mississippi River served as the major route for the shipment of goods and produce in and out of the Mississippi Valley, and New Orleans was the largest market for the west. "Large quantities of flour, pork, beef, venison, whiskey, flax, lumber, and livestock were shipped there for Southern consumption, ships' stores, or foreign markets" (Loehr 1943:96). Other markets for western produce included federal troops garrisoned in the area, new settlers who purchased supplies until their own lands were put into production, the western towns with their growing populations, and, to a limited extent, eastern markets (Loehr 1943:96). But western agricultural produce consistently exceeded local demand and flooded the New Orleans market resulting in intense competition and lowered prices. Indeed, the search for markets capable of absorbing American agricultural production remained a problem throughout the nineteenth century, relieved only partially by the construction of railroads and canals for a truly national transportation system.

As the settlers floated down the Ohio and worked their way up the Mississippi, they looked for land which was both rich and easily brought into production. Prairie sods, which were too hard for the settlers' wooden plows, were bypassed, as were the low-lying bottom lands which were frequently subject to flooding. The areas of southern Illinois and southeastern Missouri were ignored in favor of land further upriver. According to one student of settlement patterns in the Mississippi Valley, "Being rich and well-watered, this land carried an enourmous growth of timber, the clearing of which was a prodigious task. . . The settlers coming this way prized timberland as being productive and providing fuel and shelter, but this was too much of a good thing" (Anderson 1943: 99). This is also revealed in population figures for the early nineteenth century, which show that by 1850, Madison and St. Clair counties in Illinois each contained over 20,000 persons, while the population of Alexander County was only 2,484. And in Missouri that same census year, Pike County recorded 13,609 persons to Mississippi County's 3,123 (Seventh Census 1853:56-57, 68-69). The problems associated with the low-lying bottom lands were not overcome until the 1870's when lumber companies and levee projects combined to make the region agriculturally attractive. An 1875 booster publication noted that "The clearing of the heavy timber, on what is known as the 'swamp lands,' close to the river, will lead to the draining of these lands, now at high water partially overflowed, and they will eventually become the most profitable in the State for the purpose of agriculture, as they are undoubtedly the richest" (Wilson 1875:24).

In the 1820's, when the first great wave of immigration came into Illinois and Missouri, the American Bottoms, a rich, alluvial expanse of

land lying across the river from St. Louis, proved irresistable to the settlers. It had also been the center of French agriculture and had supplied food for much of Illinois, Louisiana, and New Orleans while the territory was under French rule (Pease 1965:11). Indeed, although the French are frequently viewed as traders, trappers, and only indifferent agriculturalists, they "established a more orderly agriculture than did their successors, the reputed English homemakers," and "developed a more prosperous agriculture than was to be seen there for more than fifty years following the English occupation" (Anderson 1943:100-101).

By the 1830's, population in both Illinois and Missouri had begun to move inland from the Mississippi River. In Illinois, it was the Sangamon country which lured new settlers (Anderson 1941:101) while in Missouri settlement moved up the Missouri River to the present western boundary of the state (Anderson 1941:173-174). In both instances, St. Louis benefitted as the commercial center for the growing hinterland, and by 1850 the city possessed a population of 77,860 (Seventh Census 1863:67).

In the late eighteenth and early nineteenth centuries, large land companies acquired extensive tracts in the west for resale, and thereby also directed the flow of settlement as many sought the cheapest possible lands. Some, such as the American Land Company which owned 8,000 acres and the Boston and Indiana Land Company which owned 29,000 acres, were quite large and exerted an influence comparable to their size (Billington 1963:296). But for the most part changes in government land policy from 1800 through mid-century brought an end to the predominance of the speculative land companies. The Land Act of 1800, whose major advocate was young William Henry Harrison from the Northwest Territory, contained two important provisions. For one, it lowered the minimum purchase from 640 to 320 acres, a more reasonable size for individual settlers. Furthermore, and probably more importantly, the Act of 1800 allowed an initial payment of twenty-five percent at $2.00 per acre, with subsequent payments spread over four years. Therefore, with a down payment of $160, a settler received 320 acres of federal land (Billington 1963: 264-265). In 1804 Congress further reduced the minimum purchase to 160 acres, and in 1820 lowered the price of federal land to $1.25 per acre in pieces as small as 80 acres (Pooley 1908:331).

The impact of those changes in land policy are seen in land office receipts, which totalled $700,000 in 1812 and increased to $3,274,000 in 1819 (Colgrove 1910:25). The lure of western land was primarily economic, "an attempt upon the part of the American farmer and laborer to widen his industrial field and to uplift his standard of living by taking advantage of the opportunities offered in the new west" (Pooley 1908:351). Another historian has argued that the economic factor served as the principal motivator both "with immigrants coming to the United States, and with those moving from place to place within the country. . ." (Tingley 1968:5).

The rush of population westward caused apprehension among many easterners who feared it would lead to the dissolution of the young

nation and drain the east of its labor force. In an effort to delay the creation of new states in the west, the Federalist governor of the Northwest Territory, General Arthur St. Clair, urged the division of the Territory into three parts because the people "had no fixed principles of government; they were too ignorant to frame a suitable Constitution; many of them had left the East to escape debts; in some counties almost all of them are Democrats' . . . and would prove to be as troublesome and seditious as the people of Kentucky" (Colgrove 1910:42). As seen in the admission of new states, for example, Illinois in 1818 and Missouri in 1821, and in the progressive liberalization of land policy, the conservative anti-immigration forces failed to stem the westward tide.

Although slowed by the Civil War and a series of economic depressions, immigration into Illinois and Missouri continued until late in the nineteenth century. St. Clair County, Illinois more than tripled its population, from 20,180 to 66,571, between 1850 and 1890, while across the river Pike County, Missouri grew from 13,609 to 26,321, and Jefferson County from 6,928 to 22,484 (Tenth Census 1892:68-69).

But the growth of St. Louis serves as the most dramatic indicator of the development and commercialization of the region. Between 1840 and 1850, the city gained nearly 60,000 new residents and boasted a population approaching 77,000, and during the 1850's, according to historian Constance Green, "River traffic mounted steadily in value and put the city as a center of the river trade ahead of Cincinnati . . ." (Green 1957:62). Another historian has concluded that "A combination of three events heralded the beginning of this extraordinary growth: the admission of Illinois and then Missouri to the Union, and the arrival of the first steamboat in St. Louis in 1817. The juxtiposition of statehood and concomitant governmental aid to navigation with the technological development of the steamboat would open great new vistas for St. Louis commerce" (Dobney 1978:12).

St. Louis's commercial prominence arose from several sources. For much of the nineteenth century the city served as a gateway to the west, the natural embarkation point for settlers moving on to the far west, and as such experienced a continued demand for provisions and services related to the westward migration. That was particularly true in 1849 when news regarding the discovery of gold began to spread from Suttler's Fort in California and caused the westward scramble of the "Forty-niners." More than any other city, St. Louis provided the food, clothing, ammunition, pack animals, wagons, and various other items needed for the journey to California (Green 1957:62).

In addition, especially before the 1840's, St. Louis provided a natural outlet for the fur trade. The Missouri Fur Company, organized in St. Louis in 1808, was one of the earliest efforts by Americans to exploit the fur trade west of the Mississippi, and in its first year of operation sent out 172 trappers and hunters in search of pelts. By 1834, the fur trade had begun to decline, but its impact upon St. Louis commercial activity in the preceding years was substantial. One contemporary estimate placed the value of furs brought into St. Louis from 1815

to 1830 at $3,750,000 (McReynolds 1962:108-115).

While lead mining had been of some importance in the eighteenth century, its value in western commerce grew in the 1800's. The lead taken from Missouri, Illinois, and Wisconsin mines came to St. Louis for transhipment and provided a further stimulus to the city's economy. From the acquisition of the Louisiana Territory in 1803 to December, 1819, approximately fifty-five million pounds of lead were taken from Missouri mines alone, with an average annual value of nearly $150,000 (McReynolds 1962:67). The nature of the commodity made water transportation necessary for profitable marketing and St. Louis's location and resourceful entrepreneurs gave the city superior advantages in the lead trade. One historian has also noted that "Lead was not only an important commercial commodity in itself, but it also, more than other factors, stimulated the growth of steamboating on the Upper Mississippi during the years 1828-1848 (Dobney 1978:13).

Through the nineteenth century, both Illinois and Missouri gained in population density as residents of eastern states as well as persons of foreign nationality emigrated to the west. With few exceptions each county which borders that portion of the Mississippi River under the jurisdiction of the St. Louis Corps of Engineers experienced a continuous population increase through 1880 (U.S. Censuses 1820-1890).

Although the growth of population in the Upper Mississippi region was fairly continuous, it was obviously not uniform. In Illinois, the American Bottom early on recorded a larger population than did the other counties bordering the river, while in Missouri, the prominence of St. Louis and St. Charles counties, and to a lesser extent Pike County and the Salt River region, as center of population is readily apparent. The decline in St. Louis County population recorded in the census figures for 1880 and 1890 reflected the separation of city and county in 1876. Actually, St. Louis City continued to grow in population throughout the century, increasing from 77,860 in 1850 to 350,518 in 1880 and 451,770 in 1890 (Tenth Census 1892).

By the close of the nineteenth century, the patterns of settlement which had characterized the earlier 1800's had altered. Rapid population growth brought on by the acquisition of unclaimed federal lands in the earlier decades was replaced by a slower rate of expansion or, in some instances, an actual decrease in population. Changes in commercial agriculture and the rise of labor opportunities in urban manufactories undoubtedly contributed to those changes. One study of Illinois's population movement during the years 1870 to 1910 revealed that while only forty-eight percent of the state's residents had been born in Illinois in 1870, four decades later that had increased to sixty-eight percent (Bogart 1917:70). In terms of the shift from rural to urban migration, that author concluded that "The earlier movement into the State was probably occasioned by the agricultural opportunities; in 1870 many came and few left. But 1870 saw the height of the movement into Illinois up to that time; the next two decades saw a decided falling off. In 1900 and 1910, however, the industrial attractiveness of

Table 1.
GREAT III County Population Changes - 1800 to 1890

County and State	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890
Pike, ILL	-----	-----	------	2,396	11,728	18,819	27,249	30,751	33,751	31,000
Calhoun, ILL	-----	-----	------	1,090	1,741	3,231	5,144	6,562	7,467	7,652
Jersey, ILL	-----	-----	------	-----	4,535	7,384	12,051	15,154	15,542	14,810
Madison, ILL	1,255	5,077	13,550	6,221	14,433	20,441	31,251	44,131	50,126	51,535
St. Clair, ILL	-----	-----	5,248	7,078	13,631	20,180	37,694	51,008	61,806	66,571
Monroe, ILL	-----	-----	1,516	2,000	4,481	7,679	12,832	12,982	13,682	12,948
Randolph, ILL	1,103	7,275	3,492	4,429	7,944	11,079	17,205	28,859	25,690	25,049
Jackson, ILL	-----	-----	1,542	1,828	3,566	5,862	9,589	19,634	22,505	27,809
Union, ILL	-----	-----	2,362	3,239	5,524	7,615	88,181	16,518	18,102	21,549
Alexander, ILL	-----	-----	626	1,390	3,313	2,484	4,707	10,564	14,808	16,563
Ralls, MO	-----	-----	-----	4,375	5,670	6,151	8,592	10,510	11,838	12,294
Pike, MO	-----	-----	3,747	6,129	10,646	13,609	18,417	23,076	26,715	26,321
Lincoln, MO	-----	-----	1,602	4,059	7,449	9,421	14,210	15,960	17,426	18,349
St. Charles, MO	-----	3.505	3,970	4,320	7,900	11,454	16,523	21,304	23,065	16,747
St. Louis, MO	-----	5,667	10,020	14,125	35,979	104,978	190,524	351,189	30,888	36,307
Jefferson, MO	-----	1,835	1,835	2,592	4,296	6,928	10,344	15,380	18,736	22,484
Ste. Genevieve, MO	-----	4,620	4,962	2,186	3,148	5,313	8,029	8,384	10,390	9,883
Perry, MO	-----	-----	-----	3,349	5,760	7,215	9,128	9,877	11,895	13,237
Cape Girardeau, MO	-----	3,888	5,968	7,445	9,359	13,912	15,547	17,558	20,998	22,060
Scott, MO	-----	-----	-----	2,136	5,974	3,182	5,247	7,317	8,587	11,228
Mississippi, MO	-----	-----	-----	-----	3,123	3,123	4,859	4,982	9,207	10,134

U.S. Censuses 1820-1890

Chicago more than compensated for the lessened lure of Illinois land. . ." (Bogard 1917:74).

Of some interest regarding those rural counties bordering the Upper Mississippi, the number of foreign-born residents declined during the late 1800's, just as it was increasing in the more heavily urbanized counties. In St. Clair and Monroe counties Illinois, for example, the percentage of foreign-born residents dropped from 35.8 and 33.2 percent respectively in 1870 to under ten percent in each by 1890 (Bogart 1917: 67). The German, Irish, and British immigrants of the pre-Civil War era took advantage of inexpensive government land to become commercial farmers; later immigrants sought their futures and fortunes in the burgeoning industries of the cities.

Rivers and Rails: Transportation in the Mississippi Valley

The history of the Mississippi Valley is dominated by the search for commercial opportunities in agriculture, mining, trade, and manufacturing. Most settlers came not to find a pastoral paradise but to exploit the economic potential of the region, its land and its minerals. For that reason, transportation was the key to development and growth, the means by which residents of the valley could tap outside markets for their products. The Mississippi River and its tributaries provided an early but insufficient and frequently dangerous access to the outside world. One French traveler in 1804 described the Mississippi as "a very bad neighbor. Strong in a body of yellowish muddy water, two or three thousand yards in breadth, which it annually rolls over its banks to a height of five to twenty feet . . ." (Alvord 1920:5). Before the advent of the steamboat on the western waters, commerce on the Mississippi and other rivers was limited to flatboats drifting down river and keelboats making their tortuous way up river. The keelboats, of about 100 tons each, could make but one trip from New Orleans to St. Louis or Illinois each year: "it was pole and warp, and tow and row for months at a time to fetch a cargo from the Gulf to St. Louis" (Parrish 1905:415). The keelboats used sails where the river was of sufficient breadth, poled where the bottom was solid, rowed where necessary, and at other times used the cordelle, a heavy rope which was attached to a tree on the river bank and with which the boat was warped upstream (Baldwin 1941: 62-67).

The use of steam engines to propel boats was first demonstrated in the late 1700's, but at that time the engines lacked sufficient power and durability for practical applications to river commerce. In 1807 Robert Fulton, followed in 1809 by John Stevens, proved the commercial potential of the steamboat, and by 1815 when the surge of westward migration reached the Mississippi River the steamboat was ready for adaptation to western river conditions. According to historian George Rogers Taylor, "In the great valley of the Mississippi, steam-driven vessels proved the most important factor in the great industrial development of that region from 1815 to the eve of the Civil War (Taylor 1951:63).

The growth of steamboat operation in the west was phenomenal. From 1817, when the use of steamboats was fully recognized, on to mid-century the western rivers became the home for a rapidly increasing number of boats. In 1817, only seventeen boats whose total tonnage was 3,290 plied the western rivers; in 1855 there were 727 boats with a tonnage of over 170,000, and "when account is taken of increased speed of the boats and greater carrying capacity by measured ton, the facilities for steamboat transportation on western rivers increased a hundredfold from 1820 to 1860 (Taylor 1951:63-64).

Conditions on the Mississippi and other western rivers forced boat manufacturers to innovate in their designs and adapt to the hazards which those rivers presented. Extreme fluctuations in water level, constantly shifting channels, and the ever-present threat of submerged sandbars and snags were dangers peculiar to the west. Nearly thirty percent of all steamboats which operated in western rivers before 1849 were destroyed in accidents, and nearly half of those were lost to snags (Taylor 1951: 65-66).

Western boats were designed to minimize the dangers and problems. Over the years, hulls were made increasingly broad and shallow to allow navigation in low water, a design which meant that engines had to be placed on deck along with a large superstructure to contain cargo and passengers. High pressure engines replaced the low pressure engines used in the east, not only for their lighter weight but also because they would operate on muddy river water, were less expensive, and gave additional power. Adaptations to western conditions also led to a design preference for stern-wheel steamboats because they allowed a more shallow draught (Taylor 1951:66).

Although changes in steamboat design produced a vessel better able to navigate the Mississippi and other western rivers, they also increased the dangers. The high pressure steam engine, if not properly maintained or if pushed beyond safe limits, was subject to violent explosions. By the mid-nineteenth century, boiler explosions and the resulting loss of ship, cargo, as well as deaths among passengers and crew by scalding, were not uncommon on the Mississippi. In response to the growing number of explosions and the demands of shippers and passengers, in 1852 Congress enacted the Steamboat Act which prescribed standards for construction and operation of steamboat boilers, and also hired inspectors to protect the public safety (Morrison 1903:591-2).

In addition to their appeals for federal government intervention to protect the public safety, businessmen and farmers along the Mississippi also petitioned for federal assistance in snag removal. According to Fredrick Dobney, "The demand for products and the search for markets were powerful factors militating in behalf of a federal role in internal improvements" (Dobney 1978:20). The year 1824 marked the beginning of Washington's involvement in navigation improvement on the Mississippi.

Western requests for federal action in snag removal began early in the nineteenth century but, although Presidents Jefferson, Madison, and

Monroe recognized the difficulties encountered in western commerce, the prevailing political philosophy held that such government intervention was unconstitutional. In 1824 the River and Harbors Act appropriated $75,000 for navigation improvement on the Mississippi and Ohio rivers and signaled a change in policy (Dobney 1978:21). From 1815 to 1860, the federal government spent nearly $6,000,000 on navigation improvement, much of it on the western rivers (Taylor 1951:68).

The first snagboat to operate in the west was the Heliopolis, designed by Superintendent of the Western Rivers Henry Miller Shreve, a man who also gained some fame for innovative steamboat design (Hunter 1943:201-220). Constructed with twin hulls connected by a snag beam to dislodge embedded trees and geared machinery to lift snags from the water, Shreve's snagboat began operation in 1829, and in the following year he reported that "The navigation of the Mississippi was greatly improved last year. In the year 1828, the losses by snags in that river were not less than one hundred thousand dollars . . . In 1930 there has not been but one flat boat lost on a snag in that river, that has come within my knowledge, and not a solitary loss by snags of any other description of boats" (Dobney 1978:23).

Snag removal substantially aided navigation on the Mississippi and thereby provided economic benefits for the entire valley, giving farmers and businessmen a relatively inexpensive and secure method of transport for their goods. But the city of St. Louis was the major beneficiary of those actions, and by 1850 had become the steamboat capital of the west. St. Louis also benefitted from government action to rechannel the Mississippi River, which by the 1830's was moving eastward and creating a sandbar at the St. Louis riverfront. In 1836, following appeals to Congress by the mayor and by prominent citizens of St. Louis, the Corps of Engineers assigned Lieutenant Robert E. Lee to the city for an assessment of the threat to the harbor and recommendations for appropriate action. Lee's proposal called for dikes to divert the river back towards the Missouri side and thereby remove the growing sandbar, and he personally supervised the early construction efforts. However, the Mexican War, growing sectional strains within the nation, and the re-birth of strict construction constitutionalism in Washington put an end to federal involvement. Not until 1856 were the harbor improvements completed (Dobney 1978:24-31).

Improvements in steamboat design and navigation improvement combined to bring much of the Mississippi Valley within reach of outside markets. By the 1830's many of the smaller tributaries to the Mississippi had been ascended by steamboats, and small towns and small farmers optimistically forecast economic prosperity for themselves and their region.

However, the steamboat failed to provide the anticipated economic rewards. At best, on many of the rivers, steamboat transportation was limited to periods of high water during the spring and fall seasons. Ice during the winter months prevented safe navigation. Furthermore, steamboats tied the Mississippi Valley to New Orleans as a trade partner at a time when the growing urban areas of the northeastern states offered the

best markets for agricultural produce. The failure of the south to urbanize and industrialize limited the visibility of the steamboat and the Mississippi Valley river system as an outlet for the agricultural products of the west (Billington 1963:332-334).

Additional problems which inhered in river transportation stemmed from the nature of rivers to follow a route prescribed by terrain. This seldom produced a route of the shortest possible length between central markets. For instance, the distance between Pittsburgh and St. Louis by river was 1,164 miles, but by railroad was only 612 miles (Taylor 1951:71). Furthermore, the railroads were immune to the problems of low water and ice, and did not possess the western steamboat's reputation for fiery explosion. Indeed, Ray Allen Billington contends that "Insurance underwriters, impressed with the fact that the average life of a Mississippi steamboat was only nine years, soon learned to charge higher rates on goods entrusted to the unreliable craft than to railroads. Those charges, which absorbed most of the money saved on shipping costs, shifted more and more traffic to the railroads yearly, until by 1850 most passengers and light produce moved by rail, leaving river boats only heavy freight" (Billington 1963:399).

On the upper Mississippi and some of its tributaries, steamboats remained useful and profitable until the end of the nineteenth century as agricultural settlement continued to fill unclaimed federal lands. But for the most part, the railroad construction which immediately preceded and followed the Civil War brought an end to the steamboat's reign as king of western commerce (Taylor 1951:72-73).

Railroad construction in the United States began in the late 1820's along the Atlantic seaboard; the Baltimore and Ohio, the first major rail line, received its charter in 1828. Not until the 1840's did the railroad become a component of trans-Appalachian transportation, but growth in the two decades prior to the Civil War was rapid. In 1850 Illinois had 118 miles of rail; ten years later mileage in that state had grown to 2,799. Missouri, with the Mississippi River forming an obstacle to rail connections with the east, and beset with internal conflicts over the issue of slavery, lagged behind Illinois in railroad construction, with only four miles of track in 1850 and 817 in 1860 (Taylor 1951:79).

Illinois's railroads radiated from Chicago and transformed that city from a lake port to the hub of midwestern manufacturing and commerce. In 1852, the Michigan Central entered Chicago and gave it a connection to the east. In 1856, the Illinois Central, the longest single rail line constructed at that time, began operations between Cairo and Chicago (Howard 1972:244-245). Under the guiding hand of Stephen A. Douglas and with the support of the south, the Illinois Central Railroad received a federal subsidy of land grants in 1850 to help finance construction. It was hoped that the completed line, which would extend southward through Kentucky, Tennessee and Mississippi to Mobile, Alabama, would foster north-south trade (Taylor 1951:96, 168). Illinois business interests also expected that railroad to reduce the commercial prominence of St. Louis by redirecting the flow of trade away from the Mississippi

River (Howard 1972:243).

While the Illinois Central did contribute to Chicago's growing importance as a transportation center and by the 1870's also competed successfully with river traffic, the town of Cairo, Illinois failed to achieve the prosperity it anticipated. An interesting example of town promotion in the nineteenth century, the Cairo City and Canal Company was organized to construct a city as a speculative enterprise under the leadership of Boston Entrepreneur Darius B. Holbrook. Although Cairo enjoyed obvious geographical advantages through its location at the confluence of the Ohio and Mississippi rivers and gained rail linkages through the Illinois Central, it never attracted the hoped-for population and industry (Lansden 1910).

Other rail lines in Illinois included the Rock Island, which reached the Mississippi River in 1852, the Chicago, Burlington, and Quincy, and the Chicago and Alton, which it was hoped would allow the latter city to compete with St. Louis (Howard 1972:248). According to historian George Rogers Taylor, "By 1860 the railroad net east of the Mississippi approximated its present pattern, although, of course, many details were yet to be added, and blank spaces. . . remained to be filled in" (Taylor 1951:86). In Illinois, it meant that through a system of trunk lines and small, locally financed feeder lines, commerce and trade shifted to Chicago and the agricultural produce of the state's farmers began to flow to the east through Chicago rather than to the south through St. Louis. By 1857, Chicago had eleven main lines extending to the east, the south, and the west (Howard 1972:242).

St. Louis, although frequently criticized for its failure to exploit the potential of the railroads and its continued reliance on the river trade, actually exhibited early interest in railway construction. In 1836, Governor Lilburn Boggs endorsed the idea of state aid for railroads, and in the same year a railroad convention met in St. Louis to discuss possible routes and sources of financing (McReynolds 1962:156). The Panic of 1837 and ensuing depression prevented the Missourians from beginning construction at that time, but in 1849 St. Louis hosted another railroad convention and proposed that city as the logical point for a trans-continental railroad to cross the Mississippi. And in 1851 the state legislature granted $1,500,000 in bonds to the Hannibal and St. Joseph Railroad Company and $2,000,000 to the St. Louis based Pacific Railroad Company (McReynolds 1962:157).

The Civil War caused a reduction in railroad construction in Missouri. The Pacific Railroad and the St. Louis and Iron Mountain Railroad did add to their mileage, but the North Missouri, on the other hand, was subject to Confederate guerilla raids and had difficulty maintaining its operations. The Hannibal and St. Joseph, which had completed its line between the two cities in 1859, functioned profitably throughout the war years and helped farmers in that area take advantage of the higher agricultural commodity prices which resulted from the conflict. But the expansion of Missouri's rail network failed to

recover quickly after the end of the war, and by 1870 St. Louis had clearly lost its commercial hold over the Mississippi Valley as Chicago continued its growth and became the center of national railway traffic (Gates 1932: 126-41). Not until 1874 did St. Louis acquire a direct railway connection to the east with the completion of the Eads bridge (Howard 1972:361).

Through the course of the nineteenth century, the Mississippi Valley underwent a remarkable transformation from frontier to an urbanized, commercial society. To a great extent, those changes resulted from the larger expansion of America as it extended its boundaries from the Atlantic to the Pacific. Given the growth of the national as a whole, the Mississippi Valley was inevitably altered. Migration and immigration, commercialization, and war each left its mark.

But just as important in its impact upon Illinois and Missouri was the rate of technological advance in transportation. In the early decades of that century the Mississippi and its tributaries shaped the character and activities of the area, leading to a preference among settlers for land easily accessible by river, and assisting in the development of lead mining in both Illinois and Missouri. St. Louis, endowed with good access to the Mississippi and yet shielded from its periodic floods, rose to supremacy in the river trade, and built its prosperity upon the steamboat. At mid-century, St. Louis not only dominated the commerce and intellectual life of Missouri but also drew heavily from the southern half of Illinois (Howard 1972:238).

Railroads became an important force shaping the valley while the steamboats still travelled the waters. With assistance from federal, state, and local governments, and occasionally from individual farmers who mortgaged their lands to attract new rail construction, railroads soon spread throughout Missouri and Illinois. Chicago derived much of the benefit from the new railroad network; St. Louis, impeded now by the river which had previously brought it prosperity, was unable to maintain its commercial supremacy.

For the people of both Illinois and Missouri, the alterations brought on by rapid and dependable transportation were substantial. The self-sufficient farmer of the 1820's found himself, by the end of the century, supplying grain, pork, and beef to the entire nation, and indeed to the world. The isolation of the frontier, first replaced by contact with New Orleans through the steamboat, was then thoroughly ended by thousands of miles of steel rails. While not all residents of the states shared equally in the transformation of the nineteenth century, few escaped completely.

SUMMARY OF FINDINGS

Introduction

The GREAT III cultural resource inventory is presented in four separate documents: Volume I summarizes the study findings, Volume II presents a cultural resource bibliography, document three consists of Corps of Engineers GREAT III base maps illustrating site locations, National Register of Historic Place status of sites, project corridor boundaries, and intensive survey locations, and the fourth includes the computer input and retrieval programs and file. The base maps and computer materials are placed with the St. Louis District, Corps of Engineers, the Missouri Department of Natural Resources/Historic Preservation Program, and the Illinois Department of Conservation/ Division of Historic Sites and are considered classified information.

The following section summarizes information presented in the base maps, computer materials, and bibliographic entries.

National Register of Historic Place (NRHP) Status Summary

It would be expected that National Register status information would be relatively easy to recover and record for an overview project such as the GREAT III cultural resource inventory. In reality, however, some ambiguities and omissions in the records create problems for simple listing procedures.

First, sites and districts that have been listed as NRHP properties have been published in the Federal Register at regular intervals. From these listings a set of names and/or numbers and brief descriptive statements may be generated. Some sites and districts which have been recently listed on the NRHP may not be on the latest published list which is on file at the State Historic Preservation Office (SHPO). Also, the descriptive and locational information filed by SHPO's may or may not be cross-referenced or maintained under headings which are amenable to project area-specific correlation and retrieval. During the present study, boundaries for several districts and site locations were recovered only after search and review of several files from within several repositories.

Secondly, eligibility status presents retrieval problems in that many sites have been recommended as eligible for NRHP inclusion but the determination process has not been completed. While determination of eligibility (DOE) requires review by SHPO's, there is often a time lag between the initial recommendation, review by the SHPO, DOE statement preparation, review and ruling by the Department of Interior, NRHP, and NRHP response to the federal agency and the SHPO. As a result, some sites that hold some position in the DOE process cannot be well-defined at any one given point in time.

A third problem encountered while attempting to determine current NRHP status of recorded sites for a large study area is generated from the fact that the SHPO procedures in both Missouri and Illinois allocate NRHP status information to different offices within their specific agencies. Varying NRHP status levels were found to be filed by different personnel using different filing reference systems in both SHPO agencies. As long as there is some central communication system operating which would allow any one of the persons involved an immediate current status report, NRHP standing would be easily recovered and documented. This, however, is not the case. Sites which have gone through the DOE process are often still listed at a preliminary stage in some files while listed as eligible, not eligible, mitigated, or on NRHP in other files. In addition, architectural history data and archaeological data is controlled by separate units within each of the SHPO agencies. This is certainly appropriate in terms of qualifications necessary to carry out the two different types of evaluation. Both sets of information, however, do end up in the NRHP eligiblity system when compliance requirements are in process. A problem this creates for federal compliance projects is that the communication network between the different disciplines is often ill-defined and compliance requirements may take an inordinate amount of time when the federal agency is not familiar with the SHPO division of labor.

These problems are stated simply to apprise the unwary that listing of NRHP status of properties is not an activity that can be expected to entail a review of a well defined, accurate, and logistically accessible unit of data. The respective SHPO's can adequately evaluate specific site/district information requests but large area coverage requires more intense research procedures than could be appropriately expected of the generally under-staffed SHPO.

The present investigation reviewed all avenues open to observation in which data concerning NRHP status would be expected to appear. Within the GREAT III study area a listing of NRHP status sites was generated which is presented in Table 2. A listing of specific NRHP sites and districts is presented in the appendices and is illustrated on the GREAT III base maps.

Table 2 : NRHP Status Summary by State

NRHP Status	Missouri	Illinois	Total
On NRHP - District	12	5	17
On NRHP - Site	26	17	43
Nominated - Pending	2	0	2
Determined Eligible *	4	0	4
Potentially Eligible*	199	1756	1955
Determined Ineligible **	2	8	10
Recommended Ineligible**	3	0	3

*Sites which have not gone through the DOE process

**Recommended ineligible by the investigator only, have not gone through DOE process

The large number of sites listed in Table 2 as "Potentially Eligible" deserves some discussion. The category is defined as all sites which have not gone through the DOE process or have not been recommended as not eligible for NRHP inclusion by a CRM investigation report. The large number noted in the table in effect represents over 95% of the previously recorded sites in the GREAT III project zone. This finding is problematic in that the FAI-270 and FAI-255 Interstate Highway projects which have been directed through the American Bottom in Illinois have presented archaeological reconnaissance reports which indicate that almost 10% of the known sites in the Illinois portion of the GREAT III corridor will be or have been impacted by the highway projects. Review of FAI-270 and FAI-255 CRM studies do not discuss NRHP status of sites within impact zones. The introductions of various IDOT reports as well as IAS reconnaissance and mitigation reports indicate an agreement between the IDOT and the IAS to carry out survey and mitigation under the monitoring of IAS. During the present investigation the literature and record review found little evidence that any of the sites involved in the IDOT projects in the American Bottom have been evaluated in terms of potential National Register of Historic Place significance. It is our understanding that the 1956 Highway Salvage Administration Memorandum Number 45 was superseded by the National Historic Preservation Act of 1966 (as amended) and that Section 106 provisions are quite clear in that the evaluation process is required for any federal undertaking. Section 4(f) of the Federal-Aid Highway Act of 1968 (49 U.S.C. 1653) states that FAHA requires the Secretary of Transportation not to approve any project or undertaking that adversely effects historic sites unless there is no "prudent and feasible" alternative, and the negative effects have been minimized during the project's design phase. This policy, while unclear in terms of interpretation of significance of the potentially impacted resources, does not make provision for deletion of Section 106 of P.L.89-665. If this process was in force it is assumed that the number of DOE sites in the Illinois portion of the GREAT III corridor would comprise a relatively large number. This phenomena was not adequately assessed nor could it be interpreted during the investigation.

Another striking phenomena illustrated by Table 2 is the percentage of sites/districts listed on the National Register of Historic Places within Missouri as compared to Illinois in terms of total number of previously recorded resources. In Missouri approximately 18% of the previously recorded cultural resources within the study area have been placed on, nominated and pending, or determined eligible for inclusion to the NRHP. In Illinois the same category is 1%.

The number of sites which have been determined not eligible have increased in both Missouri and Illinois since the data was gathered from which Table 2 was produced (Personal Communication: D. Crampton, Missouri Highway Department; U.S.D.A. Forest Service). Revocation of the freeze on additions to the National Register of Historic Places will also undoubtedly add a significant number of cultural resources to the NRHP column in the near future.

Cultural Resources and Potential River Inundations

Several previously recorded prehistoric sites are located within zones which have been or are likely to be affected by inundation created by artificial maintenance of the Mississippi River at levels higher than existed prior to inundation and higher than prehistoric normal stream depths (See Riggle 1980) Within the GREAT III study area few recorded site records and reported investigative statements allow interpretation of present river impact on specific archaeological, architectural, or historic sites.

In Illinois at least two prehistoric sites (Red Light and Frog City - two Middle Woodland sites) which were being impacted by river action have been investigated under Corps of Engineers auspices (Santeford and Lopinot 1978). The high site potential throughout the majority of the GREAT III corridor would suggest that many recorded and unrecorded archaeological and historic resources may be subject to disturbance and possibly destruction through river migration and wave action. Several previously recorded sites are reported to be located immediately adjacent to the current Mississippi River channel (within 100 meters). Exact data on which of these sites may be in danger from river action are not available at this time. Given the proximity to the river channel, however, the sites within 100 meters should be considered threatened and steps should be taken to assess immediacy of potential threat through field evaluation. Sites within the 100 meter corridor along the Mississippi channel include the following:

Archaeological Sites

Missouri	Illinois
Ralls County	Pike County
none	11PK69
Pike County	Calhoun County
none	11C27
Lincoln County	11C97
none	11C28
St. Charles County	11C85
23SC3	11C15
23SC2	11C100
23SC5	11C9
St. Louis County	Jersey County
23SL223	none
23SL10	Madison County
Jefferson County	11MS51
none	St. Clair County
Ste. Genevieve County	none
23STG126	Randolph County
Perry County	Fort De Chartes Area
Wrecked boat	Old French Kaskaskia
(no site # see AR-VB-7)	Site at mouth of
Cape Girareadeau County	Prairie DuRocher
23CG37	Creek no site #
23CG50	

Scott County
none

Jackson County
11J317
24-A4-10
11J71
Union County
none
Alexander County
11AX119
24D3-172 (Frog City)
24S3-171 (Red Light)

Historic-Architectural Areas

Missouri
Ralls County
none
Pike County
none
Lincoln County
none
St. Charles County
Portage De Sioux
St. Louis County
St. Louis Area
Finestown
Jefferson County
none
Ste Genevieve County
Old Ste. Genevieve Area
Perry County
none
Cape Girardeau County
Cape Girardeau Area
Scott County
none

Illinois
Pike County
none
Calhoun County
Hamburg Area
Jersey County
Elsa
Madison County
Alton Area
St. Clair County
none
Randolph County
Fort De Chartes Area
Old French Kaskaskia
Chester Area
Jackson County
none
Union County
none
Alexander County
Cairo Area

The listing above represents only those sites which have been recorded and is based on those records which were available for observation during the present investigation. It is probable that additional information may be located in the IAS repository concerning recorded archaeological sites along the Illinois side of the Mississippi River. In addition, the current rural architectural survey being carried out by the DOC/DHS will probably result in recording of specific structures located within the 100 meter zone defined as a high potential river impact area. These records should be utilized in future updates of the GREAT III records.

The 100 meter potential river impact zone is, in all probability, too narrow a definition for protection of GREAT III cultural resources. Throughout the entire corridor a great number of sites are located along ditches which are often subjected to dredging and other upkeep procedures which would impact sites. A listing generated which included all sites within 1000 meters of the Mississippi or adjacent to ditches resulted in a group containing almost 50% of the recorded sites in the GREAT III corridor.

Prehistoric/Historic Sites in the GREAT III: Summary

The total number of previously recorded sites in the GREAT III corridor varies according to whether the count is made from the computer file, the working U.S.G.S. topographic sheets, or the Corps Base Maps. The reasons for the variations in numbers are briefly described below.

Several Illinois sites on the DOC/DHS index maps did not include site numbers. While these sites could be plotted on the working maps by the investigators, they could not be listed in the computer file without a mutually exclusive single designation for each site. The investigators did not arbitrarily designate numbers for the sites in view of the potential confusion it would create. The base maps supplied by the Corps of Engineers do not correspond exactly to the U.S.G.S. topographic for the GREAT III area as they are primarily river corridor related maps and the topographic sheets extend well beyond the river valley. Also, the base maps often cut off areas which are included in the GREAT III river valley/one mile back from bluff study zone. Some of these areas contained sites which were plotted on the U.S.G.S. topographic sheets as well as entered in the computer file. The net result was that the topographic maps contain the largest number of site entries followed by base maps and computer file. The table below illustrates the count variation.

Table 3. Site Count Variation by Topographic Sheet, Corps Base Map, and Computer File*

State	Topographic Sheet	Base Map	Computer File
Illinois	2338	2123	1753
Missouri	315	242	229

*Numbers include prehistoric and historic sites. Individual structures within towns and cities not differentiated unless on NRHP or National Landmark listings.

In terms of cultural resource management the site count variation is not necessarily detrimental. As long as the topographic sheets or base maps are consulted following computer file review, the probability of recovering data concerning previously recorded sites in a proposed project area is high. The major problems would be within the Illinois portion of the GREAT III in terms of discussion of sites exhibiting no site number designation. The Missouri variation between base map and computer file is a function of listing some sites on the base maps which are outside of the specified project zone. Although present on on base maps, such sites were not included in the computer file in order to maintain consistency in Illinois and Missouri.

Cultural Affiliation: The cultural affiliation of prehistoric sites located in the GREAT III corridor reflect the accepted general cultural sequence of the area. Table 4 illustrates this sequence in terms of state and county designations.

As previously discussed, there is a definite tendency for numbers of identified components to increase as temporal position in the sequence moves forward. The major exception occurs with Late Woodland and Mississippian designations in that Late Woodland sites outnumber Mississippian sites. Late Woodland sites are probably more numerous as a result of the less sedentary settlement pattern generally attributed to this component of the cultural sequence than that associated with the agricultural Mississippian cultures. This interpretation is supported by the present review in that recorded Late Woodland sites are generally smaller and exhibit lower cultural material density (where noted in site forms) than do Mississippian manifestations.

As expected, the earliest known cultural periods are not well represented in the study corridor. On both sides of the Mississippi River Paleo-Indian sites are generally located on bluffs, hilltops or high terraces well outside river channel migration paths. Chronological age, river related aggradation/degradation, and a probable short term transient settlement pattern most likely account for this phenomena although a terrain location preference interpretation cannot be ruled out given the current lack of data concerning Paleo-Indian occupation in the general area.

Dalton sites in the GREAT III study area are generally not differentiated from Early Archaic occupation by site form recorders. The numbers reflecting all Archaic cultures in Table 4 are possibly misleading to a greater degree than that produced by failure to differentiate Dalton and Early Archaic by the tendency for site recorders to lump Archaic manifestations under the single larger Archaic category rather than define the more specific Early, Middle, and Late divisions. This is suggested to be the case by the much larger number of general Archaic site identifications when compared to even the total number of all identified Early, Middle, and Late Archaic sites (132 to 68). The literature review from the previous section of this report stongly suggests the need for more specific evaluation and assessment of the Archaic within the GREAT III, particularly the Early and Middle Archaic occupations.

Although identified Early Woodland sites exhibit a greater number than do Late Archaic components there is a great deal of regional diversity as to information concerning this occupation as well as a very limited data base. Middle Woodland occupation, which is best known in the lower Illinois Valley portion of the project area, as reflected in numbers of identified sites suggests the regionalism generally attributed to this component of the general cultural sequence. As noted in Table 4, the larger numbers of Middle Woodland sites are found in Pike, Monroe, Madison, Jackson and Calhoun counties in Illinois. This grouping is quite possibly also a function of amount of survey investigation within the counties. Whatever the case, The Middle Woodland is in great need of additional data and interpretation throughout the GREAT III, paricularly in terms of inter-regional context.

Table 4. Cultural Affiliation of Previously Recorded Sites by State and County

County (MO)	Early Man	Paleo-Indian	Dalton	Early Archaic	Middle Archaic	Late Archaic	Early Woodland	Middle Woodland	Late Woodland	Mississippian	Archaic	Woodland	Unidentified	TOTAL
Cape Gir.	0	0	0	0	0	0	0	0	2	2	0	0	2	6
Jefferson	0	2	1	1	0	0	0	0	1	5	3	10	21	44
Lincoln	0	0	0	0	0	0	0	1	1	0	2	0	9	13
Perry	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pike	0	0	0	0	0	1	1	2	3	2	0	0	29	38
Ralls	0	0	0	0	0	0	0	0	0	2	1	3	10	16
St. Charles	0	3	0	0	1	0	0	3	4	5	0	0	14	30
Ste. Gen.	0	0	1	0	1	1	1	0	4	7	5	2	24	46
St. Louis	0	0	0	1	1	2	1	0	1	2	1	0	2	11
Scott	0	1	0	0	0	1	0	1	4	5	0	0	4	16
TOTAL	0	6	2	2	3	5	3	7	21	30	12	15	115	220

County (IL)	Early Man	Paleo-Indian	Dalton	Early Archaic	Middle Archaic	Late Archaic	Early Woodland	Middle Woodland	Late Woodland	Mississippian	Archaic	Woodland	Unidentified	TOTAL
Alexander	0	1	0	0	0	0	1	1	2	10	7	20	80	122
Calhoun	0	0	0	0	0	0	1	11	6	6	5	3	3	35
Jackson	0	0	0	2	1	7	4	51	39	29	11	49	82	275
Jersey	0	0	0	0	0	0	0	2	4	2	3	1	25	37
Madison	0	1	1	2	1	4	5	11	42	48	25	13	75	228
Monroe	0	1	0	4	2	8	15	20	108	50	9	66	310	593
Pike	0	2	0	2	7	3	10	28	7	3	17	27	46	152
Pulaski	0	0	0	0	0	0	0	0	0	0	0	2	2	4
Randolph	0	3	1	2	1	1	1	4	26	8	25	20	102	194
St. Clair	0	3	1	1	1	4	2	4	8	24	8	8	40	104
Union	0	0	0	0	0	1	0	3	7	10	10	19	31	81
TOTAL	0	11	3	13	13	27	39	135	249	190	120	228	796	1824

Data drawn from computer file

The identified Late Woodland sites are distributed throughout the GREAT III study area. The distribution is far from even, however, and, with some notable exceptions, in need of a great deal of additional investigations and anlyses in terms of settlement pattern and relationships to earlier and later occupations in the area.

In terms of literature, the Mississippian cultures reflect the greatest interest in the GREAT III study area as can be noted in the large number of references pertaining the this period in the bibliography (Volume II). Although fewer in numbers when compared to Late Woodland identified sites, the Mississippian cultures exhibit characteristics and features that have inspired a great deal of attention over the past 150 years. As discussed in the cultural setting section of this report, there are many notable gaps in the understanding of the Mississippian period which should be addressed through further intensive research.

With the exceptions of a few Oneota sites in the northern portion of the American Bottom and the Fort De Chartes and Old Kaskaskia historic Indian sites, few Late Mississippian proto-historic and historic Indian sites are recorded within the GREAT III study area. Although the literature and early maps note the presence of many of these groups from the 1600's through early 1800's (cf. Tucker 1942, Temple 1966 and 1975), survey investigations have recovered little data which reflect potential for extant physical remains of the numerous occupations in the GREAT III area (cf. Harn 1971:38, Benchley 1975). This component of the general cultural sequence has yet to be adquately addressed in terms of archaeological data and analyses and should be considered a high priority area for further investigation.

As previously discussed, numbers of historic/architectural sites listed on the GREAT III cultural resource inventory are misleading in that many structures located within NRHP Districts, blocks, tracts, and towns are denoted by a single entry number and cannot reflect the variety which was and is present within the GREAT III corridor. The listing of NRHP sites and districts, National Landmarks, St. Louis Landmarks, and Illinois Landmarks within the GREAT III study area is included in the appendices of this report. Recorded sites include early French and Spanish occupation through the American period.

The GREAT III study area contains known examples of all defined cultural sequence periods in the midwest. Identified sites, however, are the exceptions rather than the rule and a great deal of additional discovery, recovery, and intensive investigation and analysis must be carried out before a realistic portrayal of prehistoric and historic occupation of the Mississippi River corridor can be presented. It is crucial that known and unknown cultural resources within the GREAT III be inventoried or re-evaluated through revisits where impact may occur as a result of federally regulated projects. Although state programs directed toward preservation of valuable cultural resources have been developed, the type of protection afforded federal projects is generally not available through state and local action.

Site Function/Type: Table 5 illustrates the general functions attributed to GREAT IIIsites by available site records. With the exception of "village/habitation" and "camp" categories, Missouri and Illinois exhibit somewhat similar percentages of occurrence in the listed site function/types. The larger proportion of camp to village sites in Illinois is probably a function of the greater amount of professional survey activity which has been carried when compared to Missouri surveyed areas. Although insufficient site form documentation was available for Illinois, 85% of the Missouri site forms were filed by amateurs. Generally, higher density cultural material sites and those exhibiting obvious features are most apt to be reported by amateurs while the CRM professional surveys record all manifestations including small low material density camp sites.

A problem from using previously recorded site record data for determination of function/type occurs as a result of failure to update initial site forms when subsequent information has been recovered. All too often the site form submitted to IAS or ASM is the last item entered at the repository about a specific site that has been given further investigation with sometimes contradictory information. This is particularly evident in initial definitions of site function/ type. While it was possible to incorporate a systematic means of dealing with this problem, observation of several of the Missouri site forms reporting sites which were later subject to excavation found that the subseqent action redefined site function/type in CRM reports. The site forms, however, had not been updated to include the change in information. To how great a degree this may affect research involving site records cannot be surmised without further investigation.

Table 5 refers only to prehistoric and historic Indian sites within the GREAT III study area and architectural/history sites are not included. As previously discussed, towns and NRHP districts have not been differentiated in terms of specific structures which are located within the defined boundaries. A listing of architectural function/type would thus be meaningless in terms of reflecting these patterns within the GREAT III study area. With the exceptions of mills, forts, trading posts, and other examples of early Euro-American occupation, significance of a structure generally is based on architectural features, date of construction, and/or the association of the structure with eminent persons in the past and function/type does little to lend itself to interpretation of degree of significance in many instances. The listing included in the appendices indicates the presence of the full gamut of possible structure types within the midwest and should be consulted for this general type of information.

Too little data were recovered from site forms to suggest potential cultural affiliation distribution. On the basis of the limited information available Table 6 illustrates a questionable distribution as a result of recording variation noted in the method section. Table 7, based on observation of site locations plotted on topographic sheets suggests major variation in prehistoric occupation patterns between Missouri and Illinois.

Table 5 : Site Function/Type by County and State

	Prehistoric													
County	Art	Burial	Cere-monial	Forti-fication	Proces-sing	Horti-culture	Kill	Quarry	Camp	Village/ habitation	Transpor-tation	Water Control	Unident-ified	Total
Cape Gir.	0	2	0	0	0	0	0	0	2	3	0	0	0	7
Jefferson	1	5	0	0	3	0	0	0	3	19	0	0	6	37
Lincoln	0	1	0	0	1	0	0	0	4	9	0	0	0	15
Perry	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pike	1	3	1	0	0	0	0	0	1	19	0	0	13	38
Ralls	0	0	0	0	1	0	0	0	1	0	0	0	11	13
St. Char.	0	2	0	0	0	0	0	0	0	9	0	0	8	19
Ste. Gen.	1	7	0	0	0	0	0	0	0	17	0	0	3	28
St. Louis	0	2	0	0	0	0	0	0	1	7	0	0	2	12
Scott	0	2	1	0	2	0	0	0	3	6	0	0	2	16
TOTAL MISSOURI	3 (2%)	24 (13%)	2 (1%)	0	7 (4%)	0	0	0	15 (8%)	89 (48%)	0	0	45 (24%)	185
Alexander	0	1	0	0	22	0	0	0	0	15	0	0	82	120
Calhoun	0	4	1	1	0	0	0	0	10	12	0	0	0	28
Jackson	5	21	0	0	0	0	0	0	70	32	0	0	103	231
Jersey	0	1	0	0	0	0	0	1	0	8	0	0	25	35
Madison	0	17	0	0	0	0	0	0	40	61	0	0	35	153
Monroe	0	48	2	0	16	6	0	0	54	48	0	0	348	522
Pike	0	0	0	4	0	0	0	0	67	36	0	0	29	136
Pulaski	0	0	0	0	0	0	0	0	3	0	0	0	1	4
Randolph	0	12	0	0	0	0	0	0	69	19	0	0	78	178
St. Clair	0	9	2	0	0	0	0	0	25	31	0	0	33	100
Union	0	5	3	0	35	0	0	1	13	25	0	0	13	93
TOTAL ILLINOIS	5 (.3%)	118 (7%)	8 (.5%)	5 (13%)	73 (5%)	6 (.3%)	0	2 (.1%)	351 (22%)	287 (18%)	0	0	746 (47%)	1600

Computer file

Table 6.
Site Form Reported Cultural Affiliation and Terrain Distribution

	Early Man	Paleo-Indian	Dal-ton	Early Archaic	Middle Archaic	Late Archaic	Early Woodland	Middle Woodland	Late Woodland	Mississi-sippian	Arch-aic	Wood-land	Unidenti-fied	TOTAL
Flood-plain	0	0	0	2	5	7	9	27	46	38	9	19	24	186
Terrace remnant	0	0	0	2	0	0	1	2	4	3	0	1	0	13
Low rise/ floodpl.	0	0	0	2	1	3	1	12	10	6	3	7	0	45
Old oxbow	0	0	0	1	1	1	0	0	1	2	0	0	5	11
Levee remnant	0	0	0	0	0	0	0	0	2	0	0	0	0	2
1st terrace	0	0	0	0	0	0	3	5	6	6	0	2	8	30
2nd terrace	0	0	0	0	0	1	0	4	10	8	0	4	14	41
3rd terrace	0	0	0	0	0	0	0	1	1	1	0	0	3	6
Terrace edge	0	0	0	0	0	0	0	1	3	0	0	1	1	6
Upland slope	0	0	0	0	1	0	1	0	2	1	1	0	3	9
Upland flats	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Hill/ ridgetop	0	3	1	0	1	0	4	8	18	11	8	9	49	112
Bluff top	0	1	0	2	0	1	1	2	10	10	3	34	29	93
Bluff slope	0	0	0	0	0	0	0	1	0	10	1	0	3	15
Toe slope	0	0	0	0	0	2	1	0	3	1	0	0	9	16
Ra-vine	0	0	0	1	1	1	1	0	0	0	0	1	1	5
Cave/rock shelter	0	0	0	1	1	1	1	0	3	8	5	2	15	37
Alluvial fan	0	0	0	0	0	1	0	0	3	6	2	4	1	17

Based on computer file from site forms indicating both variables

Table 7.
Terrain/Site Location Summary (Archaeology Sites)

STATE	Floodplain	Bluff base	Bluff top	Upland	TOTAL
Missouri	60 (28%)	26 (12%)	106 (49%)	23 (11%)	215
Illinois	1,484 (63%)	331 (14%)	379 (16%)	144 (6%)	2,338
TOTAL	1,544	357	485	167	2,553

By topographic sheet count

Steamboats

The Mississippi River cannot be discussed without discourse on steamboats. As discussed in the historic review, steamboats were a major element in the development of the Euro-American occupation of the GREAT III area. After 1817 the steamboat opened the Mississippi River to cost effective upriver movement, a major problem prior to the initiation of steamboat use. The river, however, exacted a high price in lost boats and lives before a concerted effort was made to clear the river of snags and map channels and obstructions by the 1880's. The additional problems resulting in destruction of boats through boiler explosions, wharf fires, collisions, and ice breakup made 19th century steamboating on the Mississippi a risky enterprise. From a cultural resource management point of view the steamboats which plied the rivers are a significant and colorful factor in the history of the GREAT III area. Even though hundreds of boats were destroyed and sunk in the Mississippi and its tributaries, the manner of destruction and the river actions have left little of the record from which to address physical remains. An additional problem in terms of cultural resource management stems from the fact that some steamboat remains are recovered from past channels which have been silted in. If the boat is not located on federally owned land or within a federal jurisdiction property the resource is not within the compliance responsibility of the Corps of Engineers. A recent example occurred in the St. Charles area (Kansas City District) when steamboat remains were recovered in the Missouri River floodplain. Interested collectors with metal detectors led to a great deal of disturbance and Corps involvement was minimal. Even where steamboat wrecks are recovered within current channels the role of the Corps of Engineers in terms of mitigation is still not well defined (cf. GREAT II Appendix 1980). It is assumed where steamboat remains are recovered washing out of river channel banks and under impact of river action or are recovered during Corps dredging operations that a determination of eligibility will be made and appropriate actions taken under the National Historic Preservation Act.

During the present investigation a review of 19th century newspapers containing information concerning the GREAT III was carried out. The The findings of the review were checked against Scharf's (1883) detailed listing of steamboat wrecks in terms of possible information about dates, reasons for sinking, and locations of sinkings. Table lists pertinent data recovered. This procedure resulted in a list of lost boats but gives little specific locational information which would be necessary for suggestions for resource management. In addition, the majority of the losses were incurred through complete destruction of vessels and no remains would be recoverable. Even though a great number of steamboats were lost in the GREAT III area, it is highly unlikely that a very large number are relatively intact or could be subject to preservation or mitigative action. Where examples are recovered they should be considered highly significant resources and evaluated and considered under current preservation legislative criteria (See steamboat listing in appendices).

Personnel associated with the Vicksburg District have been mapping channel anomolies including boat wrecks over the past several years. This information was not available at the time of writing and it is recommended that results of this ongoing study be included within the St. Louis District cultural resource file when it can be made available.

State of the Record: Missouri and Illinois Summary

Throughout the report several differences have been noted between the Missouri and Illinois approaches to cultural resource management. The differences are primarily noted between SHPO philosophy and organizational procedures and the recorded archaeological site form repositories. Contrasts between SHPO's, DOC/DHS and DNR/HPP, have been discussed in the methodological section of this report and will not be repeated except to note that both agencies are staffed with efficient personnel who have a high regard for historic preservation and were extremely helpful during the present investigation.

The major differences between Missouri and Illinois in terms of recorded archaeological resource data are a result of the organizational structures of the major site form central repositories and distribution of central site form records: The Illinois Archaeological Survey (IAS) records are closely held and not open to the type of data recovery procedures necessary for explicit site locational information exemplified by the GREAT III scope of work. The Archaeological Survey of Missouri (ASM) records are available at ASM as well as on file at the DNR/HPP where they are equally accessible to qualified researchers carrying out a variety of cultural resource management projects. The more open nature of the Missouri system stems from the fact that ASM is an archaeological society in the public sense while IAS is a private corporation. According to Struever and Farnsworth (1977:41) "The Illinois Archeological Survey maintains a list of certified professional archeologists and institutions especially qualified to conduct Illinois archeological research". Housed in a public institution, the University of Illinois, Urbana, IAS controls use of the repository as well as controlling access to information held by IAS members in other institutions. The system does an excellent job of determining who may utilize archaeological site form information and of maintaining site location secrecy. Since the DOC/DHS does not have a specific requirement that existing IAS site records be reviewed prior to carrying out a CRM survey project, this does not necessarily work a hardship on outside contractors. It does, however, curtail development of appropriate research design and hypotheses generation to all but the members of IAS. During the present investigation, the IAS dictates required an extensive amount of what should have been unnecessary data retrieval procedures. The detailed steps involved in development of an adequate recorded site inventory project for Illinois is presented in the appendices of this report.

Archaeological site records are located in Missouri in the ASM with microfiche copies at DNR/HPP in Jefferson City. Site forms are filed by county in the chronological order in which they were submitted to the organization for site number designation. As previously noted, ASM site form style has changed at least 4 times since the organization was initiated. The various forms, however, have required at minimum location data in terms of legal coordinates (¼ section, Township, Range, County), description of site, and a site sketch map. More recent forms have also requested a copy of a U.S.G.S. topographic illustration including location of the submitted site. General site information including legal coordinates, stream, site type, and recorder are available on computer printout through ASM or DNR/HPP.

CRM reports pertaining the GREAT III study area are held in two major repositories: DNR/HPP and DOC/DHS. The DNR/HPP holdings are complete for the State of Missouri and are cateloged by region and given a DNR/HPP Library number based on chronological entry per region. The CRM reports are also cross-referenced by drainage, county, and author. DNR/HPP is currently in the process of preparing U.S.G.S. topographic sheets illustrating all areas in Missouri which have been intensively surveyed for cultural resources and locations of cultural resources. The DOC/DHS has a partial set of CRM reports carried out in the GREAT III study area. No catelogue or cross-reference system was encountered while reviewing the materials. Locations of archaeological sites and some areas which have been intensively surveyed are illustrated on a complete set of U.S.G.S. topographic sheets for Illinois.

Other state and federal agencies that have been involved in cultural resource compliance in Illinois maintain an inventory of their own CRM reports. The U.S.D.A. Forest Service has carried out a number of intensive survey investigations as well as Phase II testing. The CRM reports are complete in terms of Forest Service projects and include in-house materials not available in other repositories. The catelogue system is based on author with cross-referencing by location of project. CRM statements prepared for the Corps of Engineers, St. Louis District are complete in terms of Corps related investigations. The catelogue system is based on author. The Illinois Department of Transportation also maintains a complete set of CRM investigations pertaining to federal highway projects carried out in Illinois. The catelogue and cross-reference system was not reviewed during the present investigation as all materials pertinent to the GREAT III inventory were gathered from other sources which involved highway actions. The CRM holdings of IAS affiliates are generally composed of those reports produced by the specific institution although there is some interaction in terms of sharing of reports. Catelogue and cross-referencing systems were not reviewed for most of the affiliates after attempts by the investigators to observe recorded site information at some of the institutions were rejected. The few affiliates which allowed observation of reports and records indicate a somewhat regional set of holdings.

The Number of CRM reports available for Illinois and Missouri number 114 for areas specifically within the GREAT III corridor. This number does not include draft reports nor those which do not contain information which would allow for locating where surveys and further investigative efforts were carried out. While the number of CRM reports prepared for Illinois and Missouri are similar in terms of simple quantity, the areas which have received intensive cultural resource survey are much more extensive in Illinois. Approximately 77% of the total area intensively surveyed in the GREAT III corridor is located in Illinois. If the early 1970 surveys carried out by Porter and Linder in the American Bottom which did not indicate specific areas surveyed are included, the additional 80.9 square kilometer covereage (Fortier1981:90) increases this figure to 95% of the GREAT III corridor which has been intensively surveyed.

The professional or amateur status of the majority of the recorders of archaeological sites within the GREAT III study area could not be assessed from the data. In general, site forms may contain the name of the reporter but little else as to qualifications, etc. is included. The major exceptions to this are the extensive number of sites recovered during the Illinois Department of Transporation surveys in the American Bottom and the Porter and Linder DOC/DHS surveys. The division of sites by county listed in Table 4 reflects this as the largest proportion of the sites recorded in Illinois occur throughout the American Bottom area in which most of these surveys have been carried out.

The most startling difference between the Missouri and Illinois cultural resource data base is simply in the numbers of previously recorded sites: Over 2000 in the Illinois portion of the GREAT III corridor as opposed to approximately 250 in Missouri (this number does not include the number of structures recorded by the DOC/DHS architectural surveys nor the individual structures recorded in St. Louis and towns along the Missouri side of the Mississippi except for NRHP sites and National Landmarks). The difference, it is hypothesized, is primarily a result of the extent of intensive or selective survey carried out in both states. In Illinois, as previously noted, a much greater area has been covered as compared to Missouri surveyed lands in the GREAT III corridor. It is possible that terrain/environmental situation factors may enter into determination of this variation. Missouri, however, includes 44.5% of the entire GREAT III bottom land terrain which is the highest site potential zone in Illinois. It is highly probable that the Mississippi River acted as a boundary in some instances and the interior Ozark Highlands would not have been as conducive to habitation as the American Bottom and lower Illinois River valley. It is just as likely, however, that a large area survey within the Missouri side of the GREAT III corridor would produce numbers of sites comparable to those represented on the Illinois side of the GREAT III study area. In support of the latter, a recent DNR/HPP survey carried out immediately to the north of the GREAT III corridor along the Mississippi River produced a large number of sites in an area which had only exhibited a few amateur recorded sites in the area prior to the survey (Henning n.d.).

The archaeological data base in Illinois also reflects a much more intensive academic interest than found in the Missouri portion of the GREAT III. The bibliographic entries in Volume II of this report contain approximately 900 publications and papers concerning Illinois archaeology while the Missouri record includes less than 100. A part of the difference may be a result of the present investigation method but the most striking reason is probably the intense interest in the American Bottom Cahokia complex, Modoc Rock Shelter, and the lower Illinois valley. In addition to the obvious archaeological merits of these areas is the fact that Illinois contains five higher education facilities adjacent to the GREAT III corridor which have had histories of archaeological interest in the area while the three Missouri institutions in the GREAT III area have not directed as much attention to prehistoric activity in Missouri. Add to this the interest and activity generated through the University of Wisconsin and University of Michigan in the American Bottom and the publication record can be understood.

One of the most ambitious data analysis projects that applies to the GREAT III study area on the Illinois side of the Mississippi River is the Predictive Model Study initiated by the Illinois DOC/DHS (Brown 1981). Archaeologists contracted with DOC/DHS to develop predictive models based on existing information. Portions of the GREAT III study area are included in four of the reports. The findings of the applicable research components are briefly summarized below.

The Asch et al. (1981:55-72) study includes the northern portion of the GREAT III project area in Illinois from Alton to Quincy. The study utilized Northwestern University Archaeological Program site records and topographic sheets noting site location and surveyed areas. Terrain/cultural affiliation is presented in summary tables for the 53 sites recorded along the Mississippi valley and bluff setting (Asch et al. 1981:66). It is noted that preliminary information gathered from collectors suggests this portion of the Mississippi valley should be no less rich in large ceramic sites than the high density Illinois River valley even though there are only 53 recorded sites (Asch et al. 1981:65).

Two major factors are suggested to account for the low number of sites: 1. Very little consistent archaeological inventory has been carried out in this area and 2. the braided channel of the Mississippi is less stable than the relatively straight lower Illinois valley which is continually shifting, forming new bars and cutting old ones, and creating a complex of sloughs, old bars, and natural levees which extend to the colluvial valley margin (Asch et al. 1981:65). A specific predictive model for the Mississippi valley portion of the Asch study is not developed as independent variable data are considered too weak (1981:70). Recommendations for development of a data base necessary for predictive model construction are discussed which will be included in the recommendations of the present study.

The Fortier study (1981:81-106) includes the American Bottom which extends from Alton to Chester, Illinois and encompasses an 80 mile long area of the GREAT III study corridor. Fortier notes that the most extensively surveyed zone in the American Bottom has been the valley floor and uplands within one mile of the floodplain (1981:84) from which information on over 798 sites has been recovered (1981:88). According to Fortier:

> Sites in the Mississippi bluff and upland zones seem to be most frequently located on the following topographic units: bluff top ridges back from the bluff edge; bluff top edges overlooking the Mississippi floodplain; creek hollows and headwaters of creek hollows; colluvial terraces at the base of bluffs and particularly near the stream outlets into the floodplain; gently undulating ridge areas of the uplands; bluff spurs and extensions into major streams such as Cahokia, Indian, and Piasa creeks and and Wood River, and rock shelter or overhand areas along vertical bluff escarpments. It is assumed that various outcrop areas would have high potential for quarry sites. Such areas, however, have not been well surveyed.

Site distribution potential in the Mississippi floodplain is still difficult to evaluate. There are a number of difficulties in determining potential localities in this area. Of primary concern is the presence of buried sites in the floodplain area. Porter's AT & T survey in Monroe County (Porter 1972b; 1973) located a site on the inside edge of a channel scar that had been subsequently filled. Several sites were also found under redeposited creek sediments within colluvial outwash areas extending out from the bluffs (Fortier 1981:96-97).

Fortier's suggestion for possible research designs for hypotheses testing in the American Bottom is included in the recommendations of the present report.

Williams and Woods' predictive model study includes the Lower Big Muddy and Kincaid Creek portions of the GREAT III (1981:107-117). The authors cogently argue that an "environmental situation" concept should be given at least equal imporance as site setting when attempting to produce predictive statements. The procedures incorporated in the study do not separate data for the GREAT III zone from other areas of the Big Muddy and findings cannot be generalized for the present investigation purposes.

Muller et al. (1981:119-132) review and summarize site information which includes the lower portion of the GREAT III study area. The information incorporated in the study is combined for the entire unit and specifics regarding the GREAT III corridor cannot be differentiated. Of interest for predictive models in general is the finding that almost all variables pertaining to the 2062 sites used in the study show a 69.9% correspondence with "cultivated fields" (1981:131) suggesting a strong bias in site recording.

The DOC/DHS predictive model studies present a series of descriptive correlations which suggest avenues for further investigation rather than predicting site occurrence probability (Brown 1981:133). While the major objective could not be achieved given recording diversity and general lack of data necessary for inferential probability statements, the studies strongly support the need for greater centralized control and direction in cultural resource data recovery and related information assessment if predictive value is ever to be a viable product of investigative action.

All of the investigators focussed on some form of site distribution/terrain environment descriptive correlation, basically the only known means of suggesting prehistoric settlement pattern physical placement with any degree of effectiveness. Until it can be shown that prehistoric populations did not generally attempt to locate in areas that were conducive to survival necessities--low flood probability, climatic element consideration, faunal and floral subsistence procurement/production potential, and water source availability--predictive models along with their underlying and unspoken causation theory base will and should be the mainstay of the archaeological community.

No relatively current overviews of Illinois archaeological sequences were recovered during the present investigation. Several good summaries of specific Illinois regions were reviewed although they primarily reflect interest in the American Bottom (cf. Munson and Harn 1971, Kelly et al. 1979) and the Illinois valley (cf. Downer n.d.) in the GREAT III study area. Very well documented excavation reports and summaries are available for specific sites throughout the American Bottom and interior Illinois. A publication on the order of the early Griffin Archeology of Eastern United States (1952) for Illinois would be a welcome addition to the literature. While perhaps the present investigation missed a publication which covers the Illinois cultural sequence with some detail, an overview of current knowledge of Illinois prehistory is certainly possible given the extensive archaeological activity within the state over the past 100 years or so. We have conjectured that such a work has not been produced simply because of the number of highly informed archaeologists within the state.

Within Missouri Chapman (1975, 1980) has published an overview of the archaeological sequence data recovered over the past century. The publications present the prehistoric sequence through summaries of cultural traditions within regional units. With the exception of the lower portion of the GREAT III study area, the sequence data indicate that very little archaeological investigation has been carried out in the majority of the Missouri area involved in the GREAT III. In terms of CRM reports, the Chapman publications appear to be a major source of information in Missouri as all those reviewed with post-1975 dates include his interpretive sequence and rely on his general Missouri overview for background setting requirements.

Both Missouri and Illinois have initiated archaeological preservation programs through the SHPO (Downer n.d., MAPA 1980). The plans include regional summaries of cultural sequences and suggestions for hypotheses appropriate to unit areas. At present, neither state has produced a document which would cover the GREAT III corridor in its entirety. The availability of this resource will be extremely beneficial to future CRM activity within the GREAT III study area.

Historic Channel Review

Sites plotted on Corps base maps were compared to St. Louis District historic channel maps with the result that only two sites were located within past or present channels (Red Light and Frog City) which have been investigated through Corps direction. It is, however, probable that the Illinois Rural Survey will record historic structures within these zones. Of interest are CRM shoreline survey zones plotted on historic channel maps: None of the surveys recorded any prehistoric sites within historic channels. This finding will be discussed and incorporated in the following recommendations along with previous results of the present investigation.

MANAGEMENT RECOMMENDATIONS

Introduction

The GREAT III Scope of Work states that "The Management procedure will determine need for investigation and provide substantive rationale for further investigation of project sites that would impact cultural resources" (GREAT III Scope of Work 1980:1). In effect, any proposed management plan would require primary input from the legal setting within which compliance has been made a component of federal undertakings and properties under federal jurisdiction and the physical and implied reality of cultural resources as interpreted from existing data. The following set of recommendations and their justifications are placed within the legal setting as currently defined by legislative act, order, and policy statements. The data framework within which recommendations and rationale for recommendations is based upon the the GREAT III cultural resource inventory findings as well as published and otherwise recorded interpretations of cultural resource occurrence and probable affects from various types of impact.

Recommendation 1: Survey of Corps of Engineers Jurisdiction Lands

36 CFR PART 800 PROTECTION OF HISTORIC AND CULTURAL PROPERTIES (JAN. 30, 1979) points out that the Advisory Council on Historic Preservation regulations implement Section 106 of the National Historic Preservation Act, as amended (16 U.S.C. 470f):

> The head of any federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking in any state and the head of any federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this act a reasonable opportunity to comment with regard to such undertaking.

Under 36 CFR 800 federal agencies are directed to follow certain steps in order to comply with the requirements of the National Historic Preservation Act and Executive Order 11593. Executive Order 11593 requires federal agency heads, in cooperation with State Historic Preservation Officers, to:

locate, inventory, and nominate to the Secretary of the Interior all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for listing on the National Register of Historic Places.

The regulation also requires that agencies consult with the State Historic Preservation Officer on federal undertakings throughout the process. It is the responsibility of each agency official to request Council's comments on any proposed undertaking which may affect a National Register or National Register eligible property and to provide adequate information for review of the effect of the undertaking; provide for adequate consideration of modifications or alterations to the proposed undertaking that could avoid, mitigate, or minimize adverse effects. The process is designed to assure that alternatives to avoid or mitigate an adverse affect on a National Register or National Register eligible property are adequately considered in the planning process. The regulations are binding on all federal agencies and specify the manner in which the Council will render its comments to federal agencies when their undertakings a affect properties included on or eligible for inclusion on the National Register of Historic Places.

It was the finding of the GREAT II cultural resource work group (1980:39) that cultural resource compliance in terms of identifying, evaluating, and requesting Advisory Council comment as spelled out by section 106 of PL 89-665 concerning cultural resources within federal lands subject to undertakings was, for the most part, being met within the GREAT II study area (Guttenberg, Iowa to Saverton, Missouri). It was also found that the component of Executive Order 11593 requiring all federal agencies to locate and identify all cultural resources on lands under their jurisdiction or control and nominate significant properties to the National Register of Historic Places was not being implemented.

The GREAT III review of cultural resource management (CRM) reports which apply to the study area suggest that the compliance procedures directed toward project-specific undertakings are being carried out as was the finding of the GREAT II compliance procedure evaluation. Within Missouri federal agencies including the Federal Highway Administration, U.S. Army Corps of Engineers, Environmental Protection agency, Federal Aviation Administration, U.S.G.S. Soil Conservation Service, U.S.G.S. Rural Electrification Administration, Housing and Urban Development, Farm Home Administration, and U.S.D.I. Fish and Wildlife Service among others have been responsible for production of CRM statements concerning project-specific federal undertakings as directed by 36 CFR 800. Similar agency directed CRM statements have been produced throughout the Illinois portion of the GREAT III corridor. There are, however, instances in which compliance requirements are not being implemented or have been implemented only after pressure from SHPO in Missouri (Personal Communication: Mike Weichman DNR/HPP). The FAI-270 and FAI-255 projects in Illinois are questionable in terms of compliance in that section 106 of PL 89-665 does not appear to be operative as noted by lack of determination of eligibility statements concerning the 100 plus archaeological sites involved.

In terms of review of available documentation, it is apparent that project-specific compliance has and is being implemented in varying degrees within the GREAT III corridor. There was no way, however, to document all of the federally related projects within the area in terms of whether or not cultural resource compliance has been carried out in all cases. The procedures involved in review by both DOC/DHS and DNR/HPP strongly suggest that whenever federal undertakings are made known to the SHPO the compliance process is initiated at that level and carried through. Review of St. Louis District, Corps of Engineers available records indicate that the Corps fulfills compliance requirements whenever project-specific untertakings are planned.

The Corps of Engineers involvement in cultural resource compliance, however, as is the case for all other federal agencies involved in jurisdiction over permits and lands has the additional responsibility outlined in Executive Order 11593 and directed by 36 CFR 800 which is to locate, inventory, and nominate all cultural resources that appear to qualify for listing on the National Register of Historic Places located within lands over which they have specfic jurisdiction. The present investigation found little record of any consistent program directed toward inventory and assessment of cultural resources within the entire Corps jurisdiction lands as was the case in the GREAT II review findings. All documentation observed suggests that specific potential project zones are observed in some instances by Corps of Engineer Environmental personnel as are reported sites which are being impacted by direct and indirect results of Corps related actions.

With only some exceptions (U.S.D.A. Forest Service), few federal agencies have initiated active inventory programs directed toward coverage of all lands under specific agency jurisdiction. The slow response is understandable in that the vast amount of work which would be required to carry out the directive to inventory all lands would entail addition of a great number of personnel as well as expanded operation facilities for those agencies which have specific jurisdiction over large tracts of land. The GREAT projects are examples of initial responses by the Corps of Engineers to the inventory directive which serve as a data base of previously recorded cultural resources within portions of Corps controlled lands.

If accepted that project-specific compliance is operative in most instances, the major problem involved in cultural resource compliance is the monumental task of inventory of cultural resources and assessment of their significance under National Register of Historic Place eligibility criteria within those lands under jurisdiction by federal agencies. At the risk of oversimplification, it is apparent that funding has been a major deterent to completion of required inventory and evaluation: With sufficient funding any amount of area could be surveyed and assessed in terms of cultural resource compliance and the law states that this is to be done but it has not.

The first management recommendation is based on the assumption that sufficient funding is not and will not be available in the near future to adequately inventory all resources and evaluate these resources

that are located within Corps jurisdiction lands. Given our understanding of current federal administration policies and directions, this assumption is very probably correct. The recommendation to be developed is based on the additional assumption that persons involved in cultural resource management and concerned about protection of cultural resources within the GREAT III jurisdiction lands can adequately evaluate general site potential of areas given previously recorded site data, environmental conditions, and additional area coverage information.

First, federal acts and regulations pertain to inventory of all cultural resources and not specific coverage of all federal lands and involvements although the latter is often interpreted to be the case. Where it can be substantially demonstrated that specific lands do not contain significant cultural resources, no further compliance related evaluation is generally required. Observation of DNR/HPP and DOC/DHS procedures strongly suggest that requirements for implementation of CRM processes for specific projects hinge upon past disturbance to an area, site potential determined from past intensive survey efforts in similar terrain in the general area, and whether or not a specific project area has aleady been surveyed. Given these precedents, it may be relatively safely assumed that future compliance will entail similar interpretations.

Secondly, both Missouri and Illinois are in the process of developing preservation programs which will include statements from area-specific archaeologists evaluating current knowledge concerning specfic regional/drainage units in terms of important research questions, known resources, environmental correlatives in reference to resource locations, among other important archaeological site potential and evaluative considerations. T he DOC/DHS has already produced a published statement directed toward predictive models involving archaeological resources which applies in some instances to the GREAT III study area (Brown 1981). DNR/HPP, under contractual arrangement with the Missouri Association of Professional Archaeologists (MAPA), is in the process of producing unit-specific archaeological interpretations which will apply to the GREAT III corridor.

Finally, the present inventory indicates that almost no known prehistoric resources are located within channels of the Mississippi which have been mapped since the early 1800's with the exception of some historic structures and a probability of presence of steamboat remains. In addition, the present inventory illustrates locations of previously recorded cultural resources throughout the GREAT III. Further, while the predictive model research funded by DOC/DHS (Brown 1981) indicates that current data are inadequate to accurately predict site occurrences, Fortier's findings suggest that high site potential areas should exist in three separate types of locales in the American Bottom: old channel or meander banks, colluvial outwash areas, and stream outlet locales (1981:98).

The combination of the aformentioned factors - legal mandate to inventory lands under federal jurisdiction, inventory of cultural resources rather than land, presence of highly informed area-specific specialists, precedent to forego actual survey coverage where low

site potential is accepted, presence of an initial data base suggesting relatively large areas which would contain few if any prehistoric sites as well as areas in which sites are known to occur, and publications presenting data and hypotheses concerning site potential and environmental variables - would indicate that a program of data recovery fulfilling federal compliance requirements in terms of lands within agency jurisdiction which would not necessitate complete area coverage is certainly feasible.

It is recommended that lands within the jurisdiction of the St. Louis District, Corps of Engineers be subject to a selective form of survey coverage. The areas to be surveyed, possibly by means of corridor approach, would be selected through input from the state agencies involved in the GREAT III lands - the Missouri Department of Natural Resources/Historic Preservation Program and the Illinois Department of Conservation/Divisoin of Historic Sites, hypotheses and predictive statements assembled by region/drainage/culture unit-specific professionals in the fields of archaeology, history, and architecture, and the inventory of previously recorded sites, areas indicating low site potential, and previously surveyed lands within the GREAT III corridor. The process would require funding for development of appropriate research design which would include area-specific specialists, state agency representatives, and Corps personnel, field observation, evaluation of significance of field recovered cultural resources, and preparation of nomination forms for those properties considered eligible for inclusion to the National Register of Historic Places.

If the inventory directive of Executive Order 11593 as supported and interpreted by 36 CFR 800 in terms of compliance requirements is to be carried out within Corps of Engineer jurisdiction lands, this approach would be more cost effective and efficient than complete coverage. The present investigation results do not allow specific recommendations as to areas which should be included within the proposed inventory procedures aside from indicating those areas in which sites are known to occur, areas which have been previously surveyed, and historic channel low potential zones. It would be imperative that the data base contained by IAS and its affiliates be incorporated in any such inventory in terms of the possibly more consistent site characteristic information it may hold. In addition, the unit specialists would have a much more in-depth understanding of specific areas than would the present investigators.

Implementation of the project would consist of development of a scope of work in conjunction with DNR/HPP and DOC/DHS. The program should be phased to include incorporation of current and in process DOC/DHS and DNR/HPP preservation plan definitions and interpretations of units applicable to the GREAT III, professional archaeological organization input in terms of areas to covered, Phase I intensive coverage of those areas decided upon, evaluation of resources recovered by the investigation, and preparation of NRHP nomination forms. The process could involve incremental units or complete jurisdiction lands depending upon funding and administrative requirements.

A problem emerges when attempting to specify exact areas that coverage should be drawn from. The Corps of Engineers has jurisdiction over all navigable waterways, contiguous adjacent wet lands, and areas adjacent to waterway channels to the ordinary high water mark (that reached 25% of the time) as well as tributaries of navigable waterways, impoundments, and other areas not applicable to the GREAT III corridor. In addition, the now rescinded 33 CFR 305 (September 30, 1981) Identification and Administration of Cultural Resources Corps counter regulations required permits for project areas which were not within the defined Corps regulation lands but would utilize or affect waterways under Corps jurisdiction. For example, factories or generating plants located on bluffs above the navigable streams which would necessitate utilization of river water required permitting through the 305 process although the actual project impact relating to facility construction was outside of Corps lands. In order for Recommendation 1 to be implemented, the specific boundaries within which the Corps of Engineers has specific jurisdictional powers would have to be defined.

Recommendation 2: Shoreline Survey

The direction of Mississippi channel migration, wave action erosion, and normal pool inundation impact are in most instances a direct result of Corps of Engineers related modification to the Upper Mississippi River and navigation and recreational use (cf. Riggle 1980). Where cultural resources are being impacted by such actions Corps responsibility has been accepted and mitigative measures have been taken where threatened resources have been defined (cf. Santeford and Lopinot 1978). Although status of integrity and immenense of threat has not been field varified, the present investigation recovered evidence of prehistoric and historic resources recorded within 100 meters of the current Mississippi channel which may be impacted through river related action. It is assumed that an unknown number of unrecorded cultural resources are located within this zone which will be impacted through any channel change or other erosion related actions. With few exceptions, the shoreline surveys which have been carried out under Corps direction in the past few years have been negative in terms of recovery of cultural resources. The present investigation findings suggest that the majority of these shoreline surveys have been carried out within areas which were historic channels. It would be expected that cultural resources once located within these channels in preinundation times would have been voided at least in part and/or covered by unknown depths of alluvium following channel migration.

It is certain that shoreline/bank observation would recover evidence of valuable cultural resources in areas which have not been within channels since historic times. In order to comply with 36 CFR 800 Protection of Historic and Cultural Properties, the Corps of Engineers should conduct a survey of the banks of the Mississippi River within the GREAT III corridor and locate and determine present status of known and unknown sites along the current bank edge including remnants of islands. Those sites recovered would be subject to evaluation as prescribed under section 106. This procedure would respond to the most minimum definition of Corps jurisdiction lands in terms of compliance to Executive Order 11593 and 36 CFR 800.

Since the Corps of Engineers has an active program of compliance in regard to project-specific undertakings, the shoreline survey would greatly enhance the total cultural resource requirements as stipulated in 36 CFR 800. The shoreline survey program could be easily initiated through definition of areas which were within historic channels (mapping complete and on file at the St. Louis District Corps of Engineers) and observation of those areas not included within the historic channel category. It would be assumed that a long term program of shoreline surveillance would be initiated as soon as feasible to monitor impact to sites currently known as well as those recovered through the additional shoreline survey and to check for potentially new resources exposed by erosion action.

Recommendation 3: Steamboat Wrecks

The shoreline survey recommendation is primarily directed toward prehistoric cultural resource protection. While prehistoric sites have been voided and/or covered through historic channel migration, steamboat remains are most likely to occur within historic channels which have been covered by alluvium as well as within the current channel in some instances. The literature and record review indicates that hundreds of boats which plied the Mississippi were sunk, burned, blown up, or otherwise destroyed since 1817. The river channel has changed extensively since the early 1800's and past wreck remains would be expected to occur within the historic channels. Given paucity of data as to specific locations of steamboat wrecks it is literally impossible to predict in any sense of the word where such remains may be recovered aside from historic channels. Mapping of current channel anomolies including potential streamboat wrecks is in progress in a lower Mississippi Corps district and it would be expected that the data recovered would be available for use in attempts to define possible placement of wrecks within the current channel. These data would be of primary importance when dredging operations may threaten potential steamboat remains.

Where evidence of steamboat remains are recovered during project-specific operations or reported to be eroding out of channel banks, it is recommended that these potentially significant cultural resources be evaluated under section 106 of P.L.89-665 and appropriate measures be taken to assure that valuable culture resources are not destroyed.

Recommendation 4: Geomorphic Studies

In conjunction with Recommendation 1, corridor survey, the Corps of Engineers should conduct geomorphic studies of the present land surface and literature and document search of pre-inundation landscape to determine likely areas of location of buried archaeological sites.

Since modern alluvium masks the historic contact surface and reduces the ability to obtain locational information about buried archaeological sites, geomophic studies would be necessary as an

initial step in determining types of areas and general site potential of area types. The intended result of such studies is the identification of areas where the pre-inundation landscape would be geologically favorable for containing archaeological sites. This information would then be taken into account in designing adequate surveys to locate such sites as discussed in Recommendation 1. This action would probably eliminate land areas which were submerged prior to inundation, or were wetlands during the prehistoric period as well, or are lands formed since inundation, from any need for survey (GREAT II:81).

Recommendation 5: CRM Organization and Clarification

The majority of the CRM reports produced for the St. Louis District appear to fulfill compliance requirements. The shortcomings, at least for overview and evaluative purposes are a result of the lack of consistency in format and types of information included within reports. The Missouri CRM reports generally contain sufficient information to allow determination of level and adequacy of project-specific investigations, locations of areas surveyed, locations of sites discovered and/ or tested or mitigated, and information pertinent to evaluation of the recovered cultural resources. CRM statements prepared for the Illinois portion of the GREAT III corridor do not necessarily include this vital information. For the purposes of organizing data resulting from cultural resource management activities within the GREAT III corridor, it is recommended that a consistent format be developed and required for CRM statements prepared for the St. Louis District, Corps of Engineers. The following outline presents a suggested format for minimal inclusion and is based extensively on DNR/HPP guidelines (Weichman 1978).

I. An introduction statement specifying project type, number, and general project description

II. Locational Data: Illustrated on Appropriate Topographic Sheet
   A. exact areas surveyed
   B. unit/area visibility conditions
   C. locations of limited shovel tests if initiated
   D. date of observation
   E. location of previously recorded sites within and near project area
   F. location of the cultural resources discovered by the project underway

III. Environmental Data
   A. Geomorphology of project area and relationship to surrounding area
   B. Soil type
   C. Relationship of project area to streams and rivers
   D. Past and present land use
   E. Erosion and obvious channel modification patterns

IV. Investigative Method
- A. Resource type being investigated (prehistoric, historic, both)
- B. Explicit statement of survey strategy used for particular cultural resources being assessed (type of coverage in terms of visibility, landforms, soils, possible presence of known and unknown sites
- C. Exact information as to how the investigation was conducted:
  1. specific area observed
  2. spacing intervals between observeres
  3. why shovel tests were or were not initiated and location of such
  4. remote sensing type where used
  5. all sources of information (literature, reports, site records, NRHP listings, etc.) used for background and evaluation during investigation

V. Results to Include
- A. Completed IAS or ASM and historic/architectural forms as applicable
- B. Official IAS or ASM site number designations
- C. Description of cultural resources (minimum-archaeology)
  1. provenience, locational coordinates, UTM's
  2. description of site in relation to landforms and water
  3. estimation of site size and how determined
  4. elevation range of site
  5. description of artifacts, features, and any other data indicating presence of site
  6. cultural affiliation and site type/function and basis of definitions
  7. curation location and procedures
- D. Description of cultural resources (minimum-architecture/history)
  1. provenience, location (address, legal, UTM's)
  2. desciption of potentially significant features and characteristics
  3. site past and present use
  4. thematic category, construction type, detail of structure
  5. photograph of site/structure/area
- E. Evaluation of significance against criteria of eligibility for National Register of Historic Place inclusion as set forth in 36 CFR 60.6, 36 CFR 800 and interpretation of all data utilized to determine significance as applicable
- F. Description of type and degree of potential impact from proposed project involved
- G. Recommendations:
  1. clearance if site(s) not qualified, qualify in terms of buried site recovery
  2. realign project to avoid impact
  3. Phase II Testing/DOE preparation
  4. nominate to NRHP
  5. other recommendations (detail and justify)

These are minimal standards which are generally exceeded by CRM investigation reports. In terms of management, the inclusion of these few absolutes in survey reports would allow efficient and effective maintenance of records (updating of base maps and computer file) as well as a consistent record for continuing efforts toward site probability determination, evaluation of significance of cultural resources within Corps project areas, and a major contribution to the efforts of the Illinois and Missouri state preservation programs in terms of usable information.

Recommendation 6: Public Interest

The earlier sequential statement for the GREAT III study area portrays cultural history in its most general sense. The magnitude of the occupations and variation in socio-economic patterns cannot be adequately illustrated aside from suggesting that the cultural traditions represent thousands of years of individual and group efforts and experiences involving manipulation of the environment in order to survive.

The archaeological record is relatively barren given the data base available to present day archaeologists. To make it a viable concern for any but the professional archaeologist and interested laypersons requires the type of interpretive approach well illustrated by the Struever and Holton (1979) presentation of lower Illinois valley data. Archaeologists often cringe when confronted with this type of publication in that the data base is too incomplete to allow such a complete illustration of prehistoric lifeways. The people were there, however, and they lived and died with many of the same survival concerns that we have today and that our children will have in the future. The format of the Struever approach adds a reality to the prehistoric record for the wide spectrum of readers. After reviewing hundreds of archaeological documents including CRM reports, academic articles, and site forms, it is apparent that the human perspective is normally not a major component in archaeological interpretation in the modern scientific approach to prehistory. Early reports on mounds and mound builders at least attempted, in a usually bigoted manner, to lend a human reality to their subject. Present day archaeology should take heed of the literary interpretation approach for several reasons.

Public funding resulting from federal rules, regulations, and laws direct perhaps 80% of current day archaeological activities. Under current federal administrative directions and public concern for fiscal ecnomic restraint and project justification, the fact that a cultural resource important to the archaeological community may be endangered may not carry much weight when cost effectiveness is considered. Laws may be changed, regulations can and are being reduced and circumvented, and funding for current compliance related projects has already been sharply reduced.

The destruction of the archaeological data base will continue with or without federal guidelines and funding.

The complete record will never be known but the archaeologist has a duty to attempt to protect the existing data base. Public interest in these important resources may be the only avenue open for protection for some years to come. It is possibly time to justify the often narrow archaeological research design and interpretation by placing it in a layperson context in order to engender interest in nonrenewable archaeological resources that are still present.

The archaeologist is caught in a dilemma in some respects: to create public interest may mean further destruction/disturbance resulting from increased public awareness and the generally unprotected nature of archaeology resources. On the other hand, without public interest which does have an impact on the laws and regulations that protect valuable cultural resources to a degree, the archaeological clout developed over the past decade will fade.

There are no easy answers. One recommendation, however, is that more attention be paid to the local archaeological societies and interested persons and that distilled/interpreted information be presented to the widest possible audience. If the efforts of the past decade are to be sustained the archaeologist cannot retreat into an academic shell and allow the remaining data base to be subject to hurried salvage or simply destroyed through public indifference.

In terms of possible Corps procedures, it would be appropriate for CRM scopes of work to include a requirement that beyond the standard technical report an additional summary be prepared which would be written for public consumption and perhaps incorporated in occasional news releases or local archaeological society publications.

Recommendation 7: Record Update

Given the relatively small portion of the GREAT III corridor which has been intensively surveyed for cultural resources, the data base represented by the inventory is not of immediate use for predictive statements based on correlative nonsite factors (cf. Brown 1981). The greatest merit from the GREAT III cultural resource inventory would stem from incorporation of the site locational information in the initial planning stage of specific projects. Areas potentially subject to disturbance from project-specific actions could be quickly evaluated in terms of CRM compliance at a preliminary planning level. On the basis of known sites and percent of the general areas surveyed, project plans could incorporate areas least likely to produce significant cultural resources. This procedure would not preclude the need for cultural resource survey but would reduce the probability of encountering significant resources and the often costly subsequent mitigative action or planning modifications required at later stages of project completion requirements.

Cultural resource management is often placed in a negative posture simply as a result of poor planning and late implementation of compliance requirements: Cultural resources recovered following issuance of permits, purchase of lands for project use, and during actual construction generally create additional costs from the late stage project modifications and/or construction downtime. This surprise element of CRM could be greatly reduced through use and update of the inventory base maps and computer file. Where sites are known to occur and surveys have already taken place, it is conceivable that mitigative costs could be determined and budgeted for during initial project planning. When project location modification is not feasible and determination of eligibility and possible MOA's can be produced at the beginning of the project sequence, the sometimes interpreted negative affects of CRM resulting from unplanned additional costs and time could be greatly reduced.

The computer record will allow the same locational data as the base map visual display through legal description and UTM coordinates. In addition, general site characteristics, where available, can be immediately recovered for preliminary analyses of sites which may potentially be within planned project impact zones.

The bibliography has been placed on IBM Mag Cards - one page per card. The stored data is available to DNR/HPP, DOC/DHS, and the St. Louis District Corps of Engineers. Update of the bibliography will require similar word processing equipement. The bibliography should find its greatest use by those carrying out CRM projects as a ready source of background publications and records.

It is recommended that the base maps be updated on at least a semi-annual basis following the mapping procedures outlined in the method section of this report. If Recommendation 5 is implemented by the Corps (CRM report content), the resultant data would be easily transferred to raw data sheets and entered on computer file and on inventory base maps. Computer file data should be entered as it is received.

Recommendations Summary

Recommendation 1: Survey of Corps Jurisdiction Lands. This recommendation, based on review of available CRM data and compliance regulations, suggests that the Corps initiate an intensive survey of areas under their jurisdiction. Areas to be included would be selective and determined through SHPO's, IAS, MAPA, and the Corps. Results would be directed toward fulfilling 36 CFR 800 as specified in Executive Order 11593 compliance requirements.

Recommendation 2: Shoreline Survey. A recommendation of reduced scope directed toward fulfillment of Corps jurisdiction lands cultural resource inventory requirements.

Recommendation 3: Steamboat Wrecks. Recommendation that the Corps initiate evaluation of these resources as recovered within jurisdiction lands as specified in Section 106 of P.L. 89-665 as amended.

Recommendation 4: Geomorphic Studies. In conjunction with cultural resource inventory compliance requirements, it is recommended that geomorphic studies be initiated by the Corps in order to establish a more informed data base line involving cultural resource location potential within Corps jurisdiction lands.

Recommendation 5: CRM Organization and Clarification. A set of minimal standards is recommended for inclusion in all CRM reports submitted to the Corps in order to maintain consistency necessary for project planning and inventory and particularly for overview purposes.

Recommendation 6: Public Interest. Suggestions for public involvement in reference to cultural resource preservation.

Recommendation 7: Record Update: Recommendation that the GREAT III inventory be updated on regular basis for planning and inventory purposes through mapping and computer file update.

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APPENDICES

SCOPE OF WORK

CULTURAL RESOURCES INVENTORY FOR THE GREAT III STUDY AREA

Great River Resource Management Study

GREAT III

1. DESCRIPTION OF WORK

a) Introduction. Management of the identified cultural resources in all areas of the GREAT III reach is a formidable task due to the fragmentation of relevant data among repositories located at a number of institutions in Missouri and Illinois. This study will ensure the availability of cultural resources data for application to practical problems such as land use planning, appropriate mitigation planning, and for future scientific investigations. The study will also further the protection of the integrity of cultural resources for public education and appreciation.

b) Scope. In order to assist the various agencies and organizations in fulfilling their responsibilities under current federal legislation relative to cultural resources, the inventory and data base developed from this study will be designed to facilitate planning and coordination of activities so that cultural resources will be efficiently managed and development activities may proceed with little or no interruption. Therefore, the final product of this study will require the contractor to organize the data base and design a management procedure that will assist in evaluating project locations with respect to cultural resources. This management procedure will accomplish the following:

1) the management procedure will determine need for investigation and provide substantive rationale for further investigation of project sites that would impact cultural resources.

2) the management procedure will indicate appropriate action in the development of mitigation action for those impacted properties listed on or determined eligible for inclusion on the National Register.

3) the management procedure should provide for evaluation of sites (archaeological, historic, historic-architectural) in terms of National Register criteria of eligibility.

4) the management procedure will provide for the utilization of the data base to aid in the determination of areas that potentially contain archaeological resources.

2. PROJECT LOCATION

The study area will include the main stem of the Mississippi River and its floodplain and bluffs from Saverton, Missouri, to Cairo, Illinois. This is to include bluff top areas extending from the bluff crest to an upland peripheral limit one mile away; regions of confluence with tributary streams and areas reported to have been intensively occupied or exploited during prehistoric and historic times within a peripheral limit of one mile above confluence. (See Attachment 1, Figures 1 and 2).

3. WORK TO BE PERFORMED BY THE CONTRACTOR

The contractor shall perform the following activities as requirements of the contract and furnish labor, supplies, materials, facilities and equipment necessary to complete the tasks required in the contract.

TASK ONE

The contractor shall conduct an in-depth review of literature pertaining to previous investigations, Governmental reports, and other sources of information to accumulate, organize and interpret the known scientific and technological data within the study area. No field investigations shall be undertaken by the contractor to obtain data. The contractor shall:

I. TOPICS

a) review available survey forms for all known archaeological, architectural, and historic sites in the study area. These survey forms will be updated as much as possible to include current site conditions, National Register status, if applicable, and other pertinent information as such information becomes available.

b) review all previous published and ongoing reports, surveys, unpublished materials, records and pertinent library sources concerning cultural resources.

c) conduct a thorough historical records search and evaluation to identify locations of known steamboat wrecks in the study area.

II. SOURCES

a) the study shall include, but not be limited to, review of information located at:

1) the Missouri Historic Preservation Program
2) the Illinois Division of Historic Sites
3) the Environmental Studies Section - Corps of Engineers, St. Louis District
4) the Archaeological Survey of Missouri - Columbia
5) the Illinois Archaeological Survey - Urbana
6) the Illinois State Museum
7) other sources as suggested by the above and a minimum of 30 other informational sources approved by the Cultural Resources Work Group, including local historical societies and museums and individuals possessing special knowledge of cultural resources in the study area.

III. REPOSITORIES

a) the designated repositories for the completed inventory and supplementary information, including working drafts, shall be:

1) the Missouri Historic Preservation Program
2) the Illinois Division of Historic Sites
3) Environmental Studies Section - Corps of Engineers, St. Louis District

b) access to the information compiled in the inventory and on the supporting maps is restricted to authorized individuals to help prevent site vandalism, looting and destruction.

1) authorized individuals are defined as the staff of the designated repositories and qualified persons conducting research and/or investigations in the study area.

2) the State Historic Preservation Officers and Corps of Engineers - St. Louis District may authorize additional individuals as the need arises.

TASK TWO

The data assembled during Task One shall be synthesized as follows:

a) to generate an annotated bibliography of published and unpublished sources in a format that shall include the following information for each entry as applicable. (See Attachment 2)

title of publication	funding federal agency (if applicable)
author	repository
date	type of report (survey, test, thesis, etc.)
county	entry number (if applicable)
watershed defined by U.S.Geologic Survey	

Each report summary shall be as concise as possible; each entry shall be cross-referenced by author, county, watershed/major water source.

b) to generate a listing of recorded site records and repositories of artifacts resulting from previous investigations in the study area.

c) develop a computerized reference system that can be adapted to computer systems currently in use or which may in future be set up at designated repositories

1) the computerized reference system shall serve as a data storage tool and shall be organized to accomodate new data as such becomes available

2) an updated computer readout of recorded sites listing locations by legal descriptions (Sec., T, R) and UTM (Universal Transverse Mercator) coordinates and general site characteristics shall be compiled.

d) develop graphs/tables/charts showing the general cultural history of the study area for general information and education purposes

e) recommend a system of curation and updating of the completed inventory. This should be a dynamic system for meaningful processing and updating of site information generated during future investigations in the study area.

TASK THREE

Using 7½ minute USGS topographic maps and/or Corps of Engineers Project Maps of the GREAT III Study Area, the contractor shall:

a) compile a series of maps indicating exact locations of all known/recorded architectural and historical resources

b) compile a series of maps indicating exact locations of all known/recorded archaeological resources, indicating cultural affiliations by code/symbol, and listing official site numbers

c) indicate by a distinct code/symbol, National Register sites, sites determined eligible for inclusion in the National Register, and Historic Districts

d) incorporate available data, such as early Corps of Engineers maps, indicating channel changes, and aerial photographs, to determine areas of possible site destruction and/or disturbance due to river meandering, i.e. "made land"

e) compile a series of maps indicating exact locations of areas of the study area that have been physically surveyed in a systematic manner, supplemented by written legal descriptions of survey locations

f) determine the type of survey conducted and assess the reliability of survey results by current standards of archaeological investigation, and identify the date of survey, the principal investigator, and funding federal agency. This information shall be incorporated in the completed data inventory.

4. DATA TO BE FURNISHED BY THE GOVERNMENT

1) access to relevant data housed under government jurisdiction, including reports, maps, etc.

2) three (3) sets of base maps of the GREAT III study area. If the contractor requires more maps, the Corps of Engineers - St. Louis District will provide negatives for reproduction by the Contractor.

5. SCHEDULE OF WORK

The following schedule shall be followed by the contractor in the submittal of progress reports, reports to the Cultural Resources Work Group, draft reports, and final reports. Included will be monthly progress reports to the Contracting Officer and the Chairman of the Cultural Resources Work Group. More frequent meetings will be arranged if necessary.

Product	No. of Calendar Days After Receipt of Contract
1. Meeting with Work Group	15
2. Progress Report to Work Group Task (1)	90
3. Progress Report to Work Group Task (2)	120
4. Draft Report to Work Group Tasks (1) and (2)	210
5. Progress Report to Work Group Task (3)	240
6. Draft Report to Work Group/ All Tasks	300
7. Final Report/All Tasks	360

6. REPORT FORMAT AND CONTENT

a) a summary report of findings shall be prepared by the contractor and his staff. The main text of the report shall be a presentation and discussion of the data compiled by completion of the contract.

b) twenty-five (25) copies of a complete draft of each task shall be submitted upon completion to the Cultural Resources Work Group Chairman for distribution for review per the Schedule of Work. Reviewers shall include representatives of the authorized repositories and other qualified professionals. After a review period of approximately 30 calendar days, the chairman will return the draft and comments of reviewers to the Contractor. The Contractor shall then complete necessary revisions. The final report shall be submitted for a review period of approximately 30 calendar days and returned to the Contractor with comments. The Contractor shall professionally edit the report within 60 calendar days after receipt of the reviewed draft. The Contractor shall submit one "camera ready" original of the final report and other required products of this contract to the Chairman for transmittal to the government. The Corps of Engineers - St. Louis District will reproduce the final report and products in the quantity determined.

c) the report shall include the following:

1) description of the study area

2) a detailed description of research methodology and the computer program

3) reference section with all sources, personal communications, interviews, etc.

4) copies of all correspondence pertaining to the completion of the project and of all correspondence pertaining to review of the draft report

5) listing of principal investigator and research personnel with their qualifications, as an appendix.

d) format of final product

1) the final original shall be typed single spaced on one side of paper with the margins set for reproduction on both sides of 8 x 1⅛ inch paper

2) other products shall be completed as specified in the Schedule of Work

7. MODIFICATIONS TO THE WORK

If upon review of any of the work submitted by the Contractor, and prior to approval thereof, the Contracting Officer determines that modifications are necessary, such modifications shall be made by the Contractor.

8. RESPONSIBILITY OF THE CONTRACTOR

The Contractor shall be responsible for all damages to persons and property which occur in connection with the work and services under this contract, without recourse against the Government.

9. TIME EXTENSION

In the event these contract schedules are exceeded due to causes beyond the control and without the fault or negligence of the Contractor, this contract will be modified in writing and the completion date will be extended one calendar day for each calendar day of delay.

APPENDIX B - VITA - PRINCIPAL INVESTIGATOR AND MAJOR CONTRIBUTORS

Craig Sturdevant, President
ENVIRONMENTAL RESEARCH CENTER OF MISSOURI, INC.
719 Houchin
Jefferson City, Missouri 65101
Telephone (314) 635-9569

Birth Date: April 20, 1943

Educational Background

B.S. Sociology	University of Iowa, Iowa City 1967
M.A. Anthropology	University of Iowa, Iowa City 1971
PhD. Course Work (Anthropology) Completed	University of Missouri, Columbia

Employment Background

Teaching Assistant and Research Assistant (Anthropology)
University of Iowa 1967-1971

Instructor of Sociology and Anthropology
Lincoln University, Jefferson City
1972-1975

Assistant Professor of Sociology and Anthropology
Lincoln University, Jefferson City
1975-1981

Director - Archaeology Lab Lincoln University, Jefferson City
1978-1981

Business Background

Contractor and Subcontractor/Construction
Iowa City, Iowa 1965-1972

President/Owner Environmental Research Center of Missouri, Inc.
Jefferson City, MO 1976 - present

Experience (Archaeology/Academic)

Archaeology course and field work
University of Iowa, Iowa City

Developer and Coordinator of Lincoln University Archaeology Area and Archaeology Laboratory

Teacher of Archaeology Theory, Methods, Archaeology Survey, Archaeology Research Design, and Data Analysis

Project Director: Moreau River Valley Surveys I, II, III, & IV, Algoa Cultural Resource Investigation, and Church Farm Survey

Reports Published (Archaeology)

An Intensive Cultural Resource Survey of Algoa Reformatory. Department of Natural Resources Publication, Jefferson City. Lincoln University Archaeology Research Series, No. 1-1977

Moreau River Valley Survey I. Lincoln University Archaeology Research Series, Vol. 2-1978

Moreau River Valley Survey II. Lincoln University Archaeology Research Series, Vol. 3-1979

Moreau River Valley Survey III. Lincoln University Archaeology Research Series, Vol.4-1980

Moreau River Valley Survey IV. Lincoln University Archaeology Research Series, Vol. 6- in progress

Church Farm Survey. Lincoln University Archaeology Research Series, Vol. 5-1981

Corps of Engineers - CRM Reports

A Preliminary Cultural Resource Reconnaissance Within the Lower Kansas River Valley: Wyandotte County, Kansas, with M. Weichman. Corps of Engineers, Kansas City District. 1977

Smithville Lake Historical Resources Mitigation Program: Oral History. Corps of Engineers, Kansas City District. 1980

Archeological Reconnaissance Kansas and Smoky Hill Rivers Bank Stabilization Study, Kansas. Corps of Engineers, Kansas City District. 1981

Cultural Resources Inventory for the Great III Study Area, Great River Resource Management Study - GREAT III. Corps of Engineers, St. Louis District - in progress (October1981)

Cultural Resource Management Reports

To date, Craig Sturdevant has been Principal Investigator and author of over 80 CRM reports prepared for USDA Soil Conservation Service, USDA Forest Service, Federal Highway Agency, Urban Mass Transit Agency, Environmental Protection Agency, state agencies, major corporations, cities, small business, and individuals. A complete listing is available on request.

Membership

Missouri Association of Professional Archaeologists

Thomas Gage, Ph.D.
4215 Wales
Columbia, Missouri 65201

Educational Background

B.S. Education	Southwest Missouri State University 1963 (major: History)
M.A. American History	University of Missouri - Columbia 1966
Ph.D. American History	University of Missouri - Columbia 1974

Three hours in Data Processing beyond Ph.D.

Educational Experience

New Haven Public Schools (Missouri), 1963-1964

St. Charles Public Schools (Missouri), 1964-1965

University of Missouri - Columbia, 1965-1969

Lincoln University (Missouri), 1969-Present: Assistant Professor of History

Publications

"The Protestant Episcopal Church," The Encyclopedia of Southern History. Baton Rouge: LSU Press, 1979

"The Great Awakening," The Encyclopedia of Southern History. Baton Rouge: LSU Press, 1979

"The Second Great Awakening," The Encyclopedia of Southern History. Baton Rouge: LSE Press, 1979

With Gary Kremer: "The Prison Against the Town: Jefferson City & the Penitentiary in the Nineteenth Century," Missouri Historical Review Feb. 1981.

Cultural Resource Management: Report Preparation/History Component

Prairie Hill Mine Expansion: Cultural Resources, Vol. 1. "History and Architectural Resources". Environmental Research Center 1979

Bee Veer Mine Expansion: Cultural Resources. "Historical Background. Environmental Research Center 1979

Cominco Mine Exploratory Project, Iron and Dent Counties. "Historical Background". Environmental Research Center 1980

Smithville Reservoir Oral History Mitigation Project, Kansas City District, Corps of Engineers. Consultant to Environmental Research Center. 1980.

O'Fallon, Missouri Sewer Line/Treatment Plant Cultural Resource Survey, "Historical Background". Environmental Research Center

John R. Carrel

1624 Marion Jefferson City, MO 65101

GENERAL BACKGROUND

Seven years varied experience in land survey with Missouri Land Survey Company (Morgan County Engineering Company), Eldon, Missouri

SPECIFIC EXPERIENCE

GEOGRAPHIC RANGE

Made surveys in 21 counties within a 100 mile radius of Versailles, Missouri.

SURVEY EXPERIENCE

Began survey experience as crew chief June 1973 with no previous surveying experience. Became proficient in surveys of subdivisions, large farms, small tracts, lake properties, boundary disputes, easements, mining, topography, river bottom farms, acreations, islands, New Madrids, old towns, abandon and/or lost towns - see example. Under the responsibility of David Slagle R.M.L.S. No. 1398.

ENGINEERING EXPERIENCE

Sewer design and staking, street design and grade staking. Helped design load limits on seven suspension bridges in Miller County. Presently preparing pre-application environmental impact studies for Howard County Coal Company. Under the responsibility of John Ayers, P.E.

RESEARCH EXPERIENCE

Specialize in complex research survey projects – see example. Familiar with record sources inside and outside of the Court Houses in the 21 county area.

TECHNICAL EXPERIENCE – Field

Seven years experience with conventional 20" instruments and periodic experience with Wylde theodolites and E.D.M. equipment and automatic levels.

Office – Computer closures with Clary Datacomp DE 600 and T.I. 58. Rough drafting on most and final drafting on several projects and five years experience in writing legal descriptions.

MANAGERIAL EXPERIENCE

July 1978 - present: Set up branch office in Boonville, Missouri. Interviewed, selected and managed personnel. Dealt with clients from initial contact to final billing. Attended conferences with attorneys, city, county, and government officials in addition to crew chief and drafting responsibilities.

LICENSE

Applied for registration as a land surveyor this fall.
County Surveyor of Cooper County effective in November, 1980.

OTHER WORK EXPERIENCE

Elementary school teacher 1971-1973 With ERC since Nov. 1980.
Production manager wholesale ceramics
Archeological projects in Kansas
Truck driver for alfalfa dehydrator plant

EDUCATION

Kansas University, Lawrence, Kansas – Major: Drawing and Painting – Minor: Anthropology
Attended Fall 1967 - Spring 1970 — Dean's Honor Roll - Spring 1968
University of Wisconsin - Surveying Refresher Course, February, 1980 - 2.4 CEU earned
Surveying seminar in Tulsa, Oklahoma, Winter 1976

PERSONAL DATA Age - 32, Married, 3 children

REFERENCES Furnished on request

APPENDIX C - DEFINITIONS OF TERMS

Definitions

1. CULTURAL RESOURCES: "Districts, sites, structures, and objects and evidence of some importance to a culture, a subculture, or a community for scientific, traditional, religious, or other reasons. These resources and relevant environmental data are important for describing and reconstructing past lifeways, for interpreting human behavior, and for predicting future courses of cultural development" (McGimsey and Davis 1977:110).

2. ARCHAEOLOGICAL RESOURCES: Those nonrenewable cultural resources that generally are revealed in particular locations referred to as archaeological sites; however sites must be viewed not only as independent entities but integrated into broader cultural manifestations.

3. ARCHAEOLOGICAL SITE: Any locus with evidence of past human activity. Sites include, but are not limited to occupation loci, work areas, evidence of framing or hunting and gathering, burials and other funerary remains, artifacts, and structures of all types.

4. CULTURAL RESOURCE MANAGEMENT (CRM): "The development and maintenance of programs designed to protect, preserve and scientifically study and manage cultural resources (including evidences of prehistoric, proto-historic, historic and recent remains) and the natural resources that figured significantly in cultural systems. Developers of such programs may include governing bodies or agencies of government, academic and research institutions, and private corporations. The goal of such programs should be the conservation of cultural values and the maximum effective conservation and utilization of these resources for the public good" (McGimsey and Davis 1977:110).

5. DATA BASE: All information on archaeological resources; this includes but is not limited to, survey and excavation records, photographs, collections (artifacts, soil samples, floral and faunal remains, etc.), manuscripts and publications.

6. RECONNAISSANCE SURVEY: A literature search and records review plus an on-the-ground surface examination of limited portions of the area to be affected, adequate to assess the general nature of the resources probably present and the probable impact of a project. Test excavations may be required at some sites so that evaluations may be adequately accomplished. Designed to provide a general impression of an area's historic properties and their values, and involves small-scale field work relative to the overall size of the area being studied. It is used only as a preliminary study (HPP Guidelines).

   INTENSIVE STUDY: An intensive, systematic, detailed, on-the-ground field inspection conducted by or under the supervision of appropriate professionals, of the total project area, sufficient to permit

determination of the number and extent of the resources present, their scientific importance, and the time factor and cost of mitigating adverse impacts on them. This type of study is preceeded by adequate background research, including previous investigation and appropriate literature search. Systematic subsurface testing is conducted if necessary to locate or obtain full descriptive and evaluative data (HPP Guidelines).

7. TESTING AND EXCAVATION: Subsurface examination of the structure and content of an archaeological site, involving use of scientific data recovery procedures. The difference between the two is a matter of scale.

8. DATA RECOVERY: The systematic removal of the scientific, prehistoric, historic, and/or archaeological data that provide an archaeological site with its research or data value. Data recovery may include preliminary survey of the archaeological site or sites to be affected for purposes of research planning, the development of specific plans for research activities, excavation, preparation of notes and records and other forms of physical removal of data and the material that contains data, protection of such data and material, analysis of such and dissemination or reports and other products of the research. Examples of data recovery include archaeological research (36 CFR 66.1(10).

9. CURATION: Storage/retrieval systems. The systematic maintenance and storage of the data base in such a manner as to retain the integrity of those data and allow it to be accessible and usable for future researchers.

10. INTEGRITY: National Register criteria state that "a property must have 'integrity of location, design, setting, materials, workmanship, feeling, and association. . .'". For archaeology, intactness is the only useful measure of integrity; a site that is intact enough to permit the preservation of the scientific data it might represent may be said to possess integrity (King 1975:14).

11. DETERMINATION OF ELIGIBILITY: The determination that a property is eligible for inclusion in the National Register of Historic Places. The determination process, outlined in 36 CFR 63, provides the mechanism whereby an agency can determine whether data worthy of recovery are threatened by its undertaking, as required by P.L. 93-291 sec. 3 (a) or (b), for those properties not already on the National Register (36 CFR 63, Supplemental Information).

12. MEMORANDUM OF AGREEMENT: Details of the actions agreed upon by the consulting parties to be taken to avoid, satisfactorily mitigate, or accept the adverse effects to the property (36 CFR 800, sec. 800.6(c)).

13. MITIGATION: The amelioration of losses of significant paleontological, scientific, prehistorical, or archaeological data which will be accomplished through pre-planned actions to preserve or recover such data by application of professional techniques and procedures reflecting the contemporary state of the art (HPP Survey Guidelines, 4th Approximation, p. 12).

14. EFFECT: An undertaking shall be considered to have an effect whenever any condition of the undertaking causes or may cause any change, beneficial or adverse, in the quality of the hostorical, architectural, archaeological, or cultural characteristics that qualify the property to meet the criteria of the National Register (36 CFR 800, sec. 800.3(a)).

INDIRECT EFFECT: Includes those effects caused by the undertaking that are later in time or farther removed in distance, but are still reasonably forseeable (36 CFR 800, sec. 800.3(a)).

DIRECT EFFECT: Direct effects are caused by the undertaking and occur at the same time and place (36 CFR 800, sec. 800.3(a)).

ADVERSE EFFECT: Occur under conditions which include but are not limited to: (1) destruction or alteration of all or part of a property; (2) isolation from or alteration of the property's surrounding environment; (3) introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting; (4) neglect of a property resulting in its deterioration or destruction; (5) transfer or sale of a property without adequate conditions or restrictions regarding preservation, maintenance, or use (36 CFR 800, sec. 800.3(b)).

NO EFFECT: The undertaking will not affect the characteristics listed under Adverse Effect (36 CFR 800, sec. 800.4 (b)(1)).

UNDERTAKING: Any Federal, federally assisted or federally licensed action, activity, or program or the approval, sanction, assistance or support of any non-Federal action, activity, or program (36 CFR 800, sec. 800.6(c)).

APPENDIX D - REPOSITORIES

Archaeological Survey of Missouri (ASM), Columbia, Missouri. ASM is the central repository for Missouri archaeological site forms. DNR/HPP has and does require all sites associated with compliance projects to be given official site designation by ASM. As the only Missouri institution allocating site numbers, all official recorded sites are present within the files.

Hard copy site files along with pertinent correspondence are indexed by county. Sites are designated by Smithsonian Trinumeral System. Site forms are also regularly microfilmed and site form locational and general characteristic information computerized. For a minimal fee, facets of the ASM file may be utilized by researchers or record search can be requested of AMS personnel.

A statement agreeing not to use site form information in a way which might threaten integrity of cultural resources must be signed prior to use of file information. Site form information may be written down but copy machine copies cannot be made of the site forms.

Archives and Oral History Center, Department of History, St. Louis University, St. Louis, Missouri. (Historical Association of Greater St. Louis has no holdings directly appropriate for the project, Dr. Towey included holdings from the University). Photograph collections . . . Unpublished reminiscenses of local residents or diaries especially oral interviews on tape. Historic architecture surveys, including photos, of structures in general area. This is a continuing project for the Missouri Department of Natural Resources. Papers of city and county officials, etc.

Department of Conservation, Division of Historic Sites Office, Springfield, Illinois (DHS). DHS houses extensive in-house rural architectural data which is currently being catalogued and cross-referenced. Listings of NRHP sites, landmark sites, and county history bibliographies are also available.

Besides IAS, DHS contains the most complete set of archaeological site forms and locational information available for Illinois. Several unofficial estimates from persons who have worked both with IAS and DHS records suggest DHS contains approximately 80% to 85% of the IAS holdings. Site forms are on microfilm and a reader/printer is available for use at a small fee. All recorded sites which have been made available to DHS and located on a complete set of 7.5 minute topographic quadruple sheets for Illinois. There is no cross referencing of the site forms and the topographic locations, however, and occasional site reference problems arise from field site designations noted on site forms which have been given IAS designation on maps. CRM report holdings are incomplete for Illinois area are not cross referenced or indexed.

Department of Natural Resources, Historic Preservation Program, Jefferson City, Missouri (DNR/HPP). Central files contain completed NRHP forms, determination of eligibility statements, newspaper clippings relevant to study area, photographs of sites. Site location on U.S.G.S. 7.5 series quad sheets are in process. Few completed for study but an early date is expected. Correspondence concerning sites and project zones available.

Historian files (survey and registration) contain photos, descriptions, position papers, and most of the completed NRHP forms pertaining to historic/architectural sites in Missouri.

DNR/HPP library contains a complete set, with minor omissions of all CRM studies carried out within Missouri. Also of importance for CRM research is a complete set of ASM site forms, current, as of May 1981, on microfilm along with a microfilm reader. Sites are indexed by number and county designation. For a minimal fee, up to date computer printout of site locations along with very general site characteristics by county, township, range and section may be acquired from DNR/HPP Compliance office.

Florissant Valley Historical Society, P.O. Box 298, Florissant, Missouri. Quarterly publication and books, writings on local history. A few plat books.

Foundation for Illinois Archaeology, Kampsville, Illinois. All site forms, CRM investigations and archaeological data collections pertaining to the study area carried out by the organization are located at the facility as are several site forms which are not included in IAS records.

The investigators visited the facility and were given general information. Availability of records for outsider research was requested but as of this writing, no response has been received.

Foundation for Restoration of Ste. Genevieve, 34 South 3rd, Ste. Genevieve, Missouri. Archive collection is microfilmed and available through the Missouri Historical Society in Columbia.

Historic Florissant, Inc., 180 Dunn Road, Florissant, Missouri. Early plat maps/hand drawn maps. Photograph collections, old city directories for local towns. This is not a historic society, the main concern is preservation of structures.

Illinois Archaeological Survey, Urbana, Illinois (IAS). Charles Baries was contacted during initial planning stages for the Illinois component of the study (letters in Appendix). The type of information required for the present investigation was not released to the investigators nor has it been for other similar investigations (cf GREAT II 1979, Benchly, personal communication).

Illinois Historical Society - Library, Springfield, Illinois. The library contains an extensive holding of historic records and publications which are cross referenced in an excellently maintained card file system. Separate county files contain photos, newspaper clippings, and other documentation information are also available.

The closed-stack system of storage detracts somewhat from usefulness for extensive overviews such as the present investigation in that each volume, journal and record which is found in the card file must be written out on a library form and requested from library personnel. For most uses, however, the state Historical Society Library is an excellent source of easily found historic data for Illinois.

Illinois Historical Survey, University of Illinois, Urbana. Contains several hundred French manuscripts pertaining to Illinois in the pre-1763 (French) period besides an extensive holding of Illinois historical publications.

Illinois State Museum, Springfield, Illinois. The museum maintains a complete holding of all of its own and sponsored publications and CRM studies. An extensive bibliography of Illinois archaeological publications and reports through 1969 is available. Also, Dr. Jacobsen is currently preparing an updated bibliography of Illinois archaeology which should be available in the near future.

IAS site record information present in the museum is under jursidiction of IAS and not available except through direct allocation by Charles Baries of IAS.

Illinois State University Library, Normal, Illinois. Standard university extensive holdings. Excellent for journals, books and rare documents pertaining to the study zone.

Jefferson College, Hillsboro, Missouri. In fall, 1980, the Department of History began compiling data for the local history center. This will greatly enhance Jefferson County historic research efforts. It should be checked for specific projects in the county.

Jefferson County Courthouse, Hillsboro, Missouri. Deed and probate records dating back to 1819. Approximately 300 19th century wills. Also plats and abstracts.

Kirkwood Historical Society, P.O. Box 3702, Kirkwood, Missouri. Early plat maps/hand drawn maps, Gazetlers, photograph collections, unpublished reminiscences of local residents or diaries, Indian artifact collections (8), costume collection, original cast iron bench from Shaw's Garden.

Landmarks Association of St. Louis, 611 Olive Street, Suite 2187, St. Louis, Missouri. Not-for-profit preservation organization engaged in research, archives not available to public. This association will provide bibliography of St. Louis architecture.

Lincoln University, Archaeology Lab, Jefferson City, Missouri. Site specific surface collections, phase II testing data, and literature/ record search information for portions of St. Charles, Lincoln and Mississippi counties.

Luther College, Iowa. The archaeology area has carried out extensive survey, testing, and mitigation near the study area and maintains pertinent site forms (also located at DNR/HPP and ASM). CRM reports and site specific data collections. Recently, the college has initiated a survey of areas within the northern study area (Missouri side of the river) under the directorship of Dale Henry which will produce greatly needed information in an area which has been subject to minimal extensive survey efforts.

Missouri Highway Department, Archaeology Lab, Jefferson City, Missouri. Site surface collection and extensive phase II data from sites in St. Charles, Pike, Lincoln, Jefferson and St. Louis counties, Missouri.

State Historical Society of Missouri, Columbia, Missouri. The society library contains probably the most extensive concoction of indexed and cross referenced set of Missouri historical data available. Books, journals, newspapers (indexed), plats, atlases, the Western Historical Manuscripts, microfilmed records, newspaper clippings, photographs, unpublished manuscripts, diaries and reports pertaining to Missouri are easily accessible. Extensive Missouri architectural and archaeological holdings are also indexed, cross referenced and available.

Missouri Historical Society, St. Louis, Missouri. Contains complete collection of Missouri Historical Review, Missouri Historical Society Bulletin, an extensive collection of atlases, county histories, family papers and general and specific area history.

Missouri State Library, Jefferson City, Missouri. Open stack library. Contains extensive collection of Missouri county histories, complete Smithsonian publications, Missouri Archaeologist, some Missouri Archaeology Society Newsletter, no CRM reports. Useful only as a general background information source.

Museum of Natural History, Chicago, Illinois. Old site forms and reports have been divested and given to IAS. Extensive artifact collection from study area, particularly Mississippian ceramics.

Old Courthouse, St. Louis. Some historical documents pertinent to the study area. Architectural publications, maps, specific St. Louis building information.

Pike County Historical Society, Curryville, Missouri. Are in the process of publishing a history of Pike County since 1883. This history will include pictures, plats, etc. Some local histories, diaries.

Ste. Genevieve County Courthouse, Ste. Genevieve, Missouri. Pre-1804 materials are unbound and available only in microfilm. Bound materials after 1804.

St. Louis District, Corps of Engineers, 210 N. Tucker Blvd., St. Louis, Missouri. All Corps CRM reports, both contracts and in-house projects, are indexed (in process) by author within the Environmental Division. Channel change maps available and correspondence referring to cultural resources is indexed by project. The base maps (15 minute scale) showing exact locations of all archaeological sites in the Great III

study area will be housed in this facility as well as the computerized cultural resource site system developed for the project.

St. Paul Title Company, Hillsboro, Missouri. Possess deeds dating back to 1808. Small private collection of local histories.

Southeast Missouri State University, (SEMO) Cape Girardeau, Missouri. Contains artifact collection, including SEMO Mississippian ceramics, materials recorded by CRM investigation, and an extensive historical context library.

Southern Illinois University, (SIU) Department of Anthropology, Carbondale, Illinois. All CRM reports, publications, papers presented, and site forms are on file. The institution is under contractual agreement with IAS and direct clearance must be given by Charles Baries IAS before information can be reviewed.

U.S.D.A Forest Service, Harrisburg, Illinois. All CRM reports pertaining to Forest Service jurisdiction lands including in-house investigations are located in the Environmental Division and are indexed and cross referenced. Site forms for Forest Service lands are also on file. Clearance should be requested for review of records prior to visiting the facility.

University of Michigan. This institution was not contacted nor was it visited during the investigation. Extensive collections as well as site data are held, particularly pertaining to the southeast portion of the project zone and the American Bottoms.

University of Missouri-Columbia, North-American Archaeology Division, Columbia, Missouri. The North-American Archaeology Division is a unit of the UMC Anthropology Department. The Division maintains extensive artifactual and other archaeological data collections some of which pertain to the study area. All CRM and other archaeological investigative work carried out by the Division is on file and the Division, abstracts of which are currently being computerized through the ASM. Several archaeological investigations within and near the study area have been carried out by Division faculty, staff and students. During CRM investigation, the Division should be contacted for input from their knowledgeable personnel.

University of Missouri-St. Louis, St. Louis, Missouri. History books, journals, rare documents. Masters thesis and doctoral dissertations which pertain to the study area and St. Louis architectural publications are located here.

University of Wisconsin, Madison, Wisconsin, and University of Wisconsin, Milwaukee, Wisconson. The institutions are under contract with IAS and can only allow observation of the site records with express permission from Charles Baries, IAS.

Washington University Library, St. Louis, Missouri. Masters theses and doctoral dissertations. Small amount of Missouri history holdings. St. Louis architectural information holdings.

Alexander County, Illinois

Cairo Historical Society, 2714 Washington Avenue, Cairo, Illinois 62914.

Pulaski - Alexander Bicentennial Commission, Cairo Chamber of Commerce, 228 Eight Street, Cairo, Illinois 62914.

Magnolia Manor Historical Museum, 2700 Washington Avenue, Cairo, Illinois 62914.

Thebes Pioneer Museum, Thebes, Illinois 62990.

Calhoun County, Illinois

Calhoun County Historical Society, c/o Robert F. Kim, Golden Eagle, Illinois 62036.

Jackson County, Illinois

Jackson County Historical Society, P.O. Box 7, Murphysboro, Illinois 62966.

Central Carbondale Historic Area Association, 110 South Maple Street, Carbondale, Illinois 62901.

Jersey County, Illinois

Jersey County Historical Society, 708 South Washington Street, Jerseyville, Illinois 62052.

Historic Elsah Foundation, P.O. Box 117, Elsah, Illinois 62928. Almost all of Elsah is an historic district listed in the National Register.

Madison County, Illinois

Madison County Historical Society, Inc., Madison County Museum, 715 North Main Street, Edwardsville, Illinois 62025.

Alton Area Landmarks Association, 119 Market Street, Alton, Illinois 62002.

Alton Area Historical Society, 2423 Edwards, Alton, Illinois 62002.

Historic Alton Preservation, Bethany Lane, Godfrey, Illinois 62035.

Alton Museum of History and Art, Inc., P.O. Box 285, Alton, Illinois 62002.

Cahokia Mounds State Park and Museum, Bypass U.S. 40, Collinsville, Illinois 62234.

Cahokia Mounds Museum Society, 7850 Collinsville Road, East St. Louis, Illinois 62201.

Monroe County, Illinois

Monroe County Historical Society, 301 South Main Street, Waterloo, Illinois 62298.

Pike County, Illinois

Historic Sites Commission, Box 501, Pike County Historical Society, Pittsfield, Illinois 62363. This commission works with individual landmarks.

Pike County Historical Society, Illinois c/o J.W. Yokem, Route 1, Box 150, Pleasant Hill, Illinois 62366.

Randolph County, Illinois

Randolph County Historical Society, c/o Ebers Schweizer, P.O. Box 5, Steeleville, Illinois 62288.

Friends of the Fort, Prairie du Rocher, Illinois 62277.

St. Clair County, Illinois

St. Clair County Historical Society and Museum, 701 East Washington Street, Belleville, Illinois 62221.

Historical Association of Greater St. Louis, 305 Stanton, Lebanon, Illinois 62254.

Union County, Illinois

Union County Historical Society, 208 East Lewis Avenue, Jonesboro, Illinois 62952.

Cape Girardeau County, Missouri

Cape Girardeau County Historical Society, 228 Hillview, Cape Girardeau, Missouri 63701.

Historical Association of Greater Cape Girardeau, 325 South Spanish, Cape Girardeau, Missouri 63701.

Jefferson County, Missouri

Kimmswick Historical Society, General Delivery, Kimmswick, Missouri 65053.

Lincoln County, Missouri

Lincoln County Historical and Archaeological Societies, P.O. Box 176, Troy, Missouri 63379.

Perry County, Missouri

Perry County Lutheran Historical Society, Box 92, Altenburg, Missouri 63732.

Ralls County, Missouri

Ralls County Historical Society, Center, Missouri 63459.

St. Charles County, Missouri

St. Charles County Historical Society, P.O. Box 455, St. Charles, Missouri 63301.

Wentzville Missouri Community Historical Society, South Linn Avenue, Wentzville, Missouri 63385.

APPENDIX E - OUTLINE OF RESEARCH PROCEDURES

CRM Review and Site Record Documentation: Missouri

I. Location of information

A. Historic

1. Missouri State Historical Society
2. County Historical Societies
3. City Historical Societies
4. DNR/HPP Library
   a. Cross referenced by county/drainage/author
   b. CRM reports
   c. Other surveys
5. DNR/HPP central files
   a. Reference county/city/historical district/township/range
   b. NRHP files
   c. D.O.E. files/D.O.E. statements in progress
   d. Grn. inventories
   e. Correspondence files
6. DNR/HPP Historic Officer File (J. Denny)
   a. NRHP files - county/city
   b. Pending files - alpha
   c. To be reviewed files - alpha
   d. Opinion site files - alpha
   e. Theme files - alpha, inactive
7. State Land Survey Authority, Rolla, Missouri
   a. G.L.O. notes and plats
   b. Microfilm county survey records
8. County Recorder's Offices
   a. Plat books
   b. County surveyors records
   c. Deed books
9. State Archives, Jefferson City
   a. G.L.O. notes and plats
   b. County legal records

B. Historic and prehistoric archaeology

1. DNR/HPP Library
   a. CRM reports and Surveys
   b. Research work
   c. Articles and papers
   d. ASM publications
   e. Cross referenced by county/drainage/author
2. CNR/HPP central files
   a. NRHP documents/forms
   b. D.O.E. statements/in progress
   c. Other sites incomplete
   d. Reference - county/township/range
   e. Correspondence files
3. DNR/HPP
   a. HRPH - reference county/city
   b. Pending reference - alpha
   c. To be reviewed - alpha
   d. Opinion site - alpha

4. A.S.M. files
    a. Complete site index - cross reference
    b. Site forms and microfilm
    c. Correspondence files
    d. CRM reports in computer
    e. HRHP files
    f. Comp. bibliography index
5. DNR/HPP
    a. Microfilm (ASM site forms)
    b. Computer terminal

II. Research procedure

A. Define project area

1. Plot boundaries on U.S.G.S.
2. Form county files of project area
    a. List section, township, range in project area
    b. County road map
    c. G.L.O. township plats

B. Catalog all pertinent CRM reports

1. By county
2. By drainage (cross check)
3. From all library sources

C. Review pertinent literature for relevancy

D. Catalogue relevant literature

1. Fill out bibliography sheet
2. List and assign numbers

E. Review relevant literature

1. For specific recoverable data
    a. Survey areas
    b. Site locations
    c. Site data

F. Catalogue all potential archaeological sites on computer index

1. By township, range (by county)
2. Cross check by drainage
3. List all sites with no section or township, range, consider as potential sites in project area

G. Review summary sheets (ASM)

1. For omissions in index
    a. Locational information
    b. New sites

H. Review site forms

1. For questionable information
    a. In summary sheets
    b. In index

I. Review National Register Index

1. NRHP sites and districts
2. Historic landmark sites
3. List potential sites

J. Final review and recording sequence for sites

1. Sites from literature recorded during final review of literature
2. DNR/HPP central files
   a. NRHP - check potential site list
   b. DOE - cehck potential site list
   c. DOE in progress - look for on list
3. DNR/HPP Survey and Registration Office
   a. Pending sites - (No. useable organization, look through all files for potential sites)
   b. To be reviewed sites
   c. Opinion sites
   d. Cross check NRHP files for additional information
4. Central files on general site inventory
5. DNR/HPP Microfilm
6. ASM NRHP files for additional information
7. ASM site forms
8. ASM correspondence files

III. A. Parallel departments at DNR

1. Same site may not have sample status level
2. Cross check for latest information and status

B. Missing files contents DNR

1. Cross check for data
2. May be on National Landmarks

C. St. Louis

1. Site locations from maps St. Louis Landmarks Assoc.
   a. NRHP - not up to date
   b. St. Louis Landmarks map updated
2. St. Louis Landmarks files
   a. No files at association
   b. May be files at city building
   c. Cross check other sources for data
3. National Landmarks files in DNR/HPP Central Files and correspondence

D. Mapping site with incorrect or missing data

1. Complete site form gives 7 part location parameters
   a. Part 1 - legal description
   b. Part 2 - Geomorphic description
   c. Part 3 - Relationship to nearest water
   d. Part 4 - Geographic relationship to roads/towns
   e. Part 5 - map
   f. Part 6 - UTM or Lat./Long.
   g. Part 7 - Land owner or place name

2. Priority grid sheet developed to calculate priority level of each component of the description
3. Site protection/probability areas defined
    a. Maximum area each of the components could occupy defined
    b. Consider priority level of conflicting components
    c. Define area on map with circle enclosing the adjusted probability area
    d. Give UTM for radius point
    e. Give radius in meters

E. Management of site protection areas

1. Value of site considered
    a. NRHP status
    b. Consider area of probability
2. If area is to be impacted by project that contains potentially eligible site
    a. Entire probability areas should be surveyed
    b. Sites recovered within area evaluated
    c. Assign A,B,C, ext., plus given site number
    d. In overlapping areas new site numbers assigned if old sites can not be differentiated

CRM Review: Illinois

I. Location
   A. Illinois Department of Conservation Division of Historic Sites, Springfield, Illinois (DHS)
   B. U.S. Army Corps of Engineers, Division of Environmental Studies, St. Louis District Headquarters (SLC)
   C. U.S. Forest Service, Harrisburg, Illinois (USFS)
   D. Other locations visited but not open to investigation
      1. Foundation for Illinois Archaeology, Contract Archaeology Program, Kampsville, Illinois (FIA)
      2. University of Wisconsin, Milwaulkee, Wisconsin (UWMi)
      3. University of Wisconsin, Madison, Wisconsin (UWMa)
      4. Museum of Natural History, Chicago, Illinois (MNH)
      5. Illinois State Museum, Springfield, Illinois
      6. Illinois State Museum, Department of Contract Archaeology
      7. S.I.U., Carbondale, Illinois

II. Condition of Record
   A. DHS
      1. Library
         a. Incomplete collection
         b. No systematic indexing
         c. No separation by county
      2. Mapping
         a. U.S.G.S. 7.5 minute series quads
         b. Incomplete
         c. Generalized survey boundary in blue line
   B. SLC
      1. Library
         a. In house surveys
         b. Contract surveys (Corps)
         c. General selection of other relevant works
         d. Reports are not housed in one specific area
      2. Indexing system
         a. Partially cross-referenced
         b. Unfinished
      3. Mapping
         a. Incomplete
         b. No consistant system
         c. Absent from most reports
   C. USFS
      1. Library
         a. In house surveys
         b. Contract surveys
      2. Mapping
         a. U.S.G.S. Forest Service base maps, township/range blocks
         b. Specific survey boundaries in yellow marker
         c. Complete within scope of department

D. Repositories not open to investigation - general observations
   1. Libraries indexed
   2. Mapping
      a. USGS quad 7.5 minutes
      b. Specific site boundaries

III. Research method
   A. DHS
      1. All CRM reports contained in library were reviewed
         a. For relevance to project
         b. For county
         c. For survey boundaries
      2. Relevant reports were searched for specific data
         a. Title page
         b. Abstract
         c. Survey boundaries
         d. Scope of work
         e. Site locations
         f. Site data
         g. Recommendations
      3. Specific data was zeroxed for study
      4. Recording - CRM report summary sheet filed for each report
      5. Mapping
         a. Survey areas marked on U.S.G.S. 7.5 minutes, yellow/black outline
         b. Site boundaries marked on U.G.S. 7.5 minutes, black outline, color coded

   B. SLC
      1. All CRM reports contained in library were reviewed
         a. For relevance to project
         b. For county
         c. For survey boundaries
      2. Relevant reports were searched for specific data
         a. Title page
         b. Abstract
         c. Survey boundaries
         d. Scope of work
         e. Site locations
         f. Site data
         g. Recommendations
      3. Recording/mapping
         a. Relevant reports were cataloged
         b. Some specific data recorded on site
         c. Missing data reviewed at DHS
         d. Source revisited as new index neared completion
   C. USFS
      1. Base maps were searched for
         a. Surveys not found at other sources
         b. Specific survey boundaries

Site Form Review: Illinois

I. Location same as CRM listing

II. Condition of record
    A. DHS
        1. Site form condition
            a. Incomplete collection
            b. No catalogue
            c. No index
            d. Second and third generation forms
                1. Data transferred from form to form as it passed from institution to IAS to DHS (except for data transferred from institutions to DHS
                2. Maps eliminated or redrawn from USGS
                3. Drawings of site contents eliminated
                4. Listing of contents eliminated
                5. Geomorphic texts eliminated
                6. Locations generalized
                7. Errors generated
            e. Storage
                1. Loose in cardboard boxes
                2. Last half of Randolph (R-260 and on) missing
        2. CRM reports (see CRM status)
        3. Micro film
            a. No index
            b. Reel storage - 2 copies
            c. Reader printer available
            d. Numerical order by county
                1. Except some counties in last reel filmed
                2. Except forms with institutional or field numbers only
            e. Incomplete
        4. Site map records
            a. U.S.G.S. 7.5 minute/or 15 minute
            b. Incomplete
            c. Have been interpolated from site forms or CRM mostly by clerical personel
            d. Approximate location of sites marked with X on quad sheets
            e. No key for cross check
        5. Orginal recorders no longer with department and some confusion as to location and condition of records
    B. SLC - locational information only as contained within CRM reports (See CRM-II-B)
    C. USFS
        1. Partial collection of copies of SIU site forms
        2. Mapping
            a. Good site locations and boundaries
            b. Complete inventory of USFS holding

D. Other repositories visited
    1. East active institution contains site records relevant to project
        a. Not found in sources open to investigation
        b. Several not yet transferred to IAS (one institution has over 800 sites not trasferred though not relevant to GREAT III)
        c. Individual repositories contain more complete and accurate data than IAS and DHS
    2. Most museums have divested themselves of site records (given to IAS)

I Research methods /Locational
A. DHS
    1. Maps were searched for relevant sites and locations were transferred to working quads
        a. No practical method of cross checking this step available
        b. Sites were catalogued from working copy
    2. Reports were searched for site data
    3. Micro-film was reviewed for catalogued sites
        a. Site forms with minimal data were hand copied
        b. Site forms with extensive data were printed
    4. Site form copies were reviewed
        a. Location on maps from DHS were corrected on working copy
        b. Site boundaries added to working copy
        c. Step a. and b. served as cross check
        d. Sites picked up in Step c. copied and mapped
B. SLC - transferred locational data from CRM reports
C. USFS
    1. Data at this source was reviewed and compared with data recovered from DHS
    2. Working maps were compared and corrected
    3. New sites added to maps
    4. SIU forms compared with copied IAS forms for same sites
D. Other locations visited but not open to investigation
    1. Found to contain relevant data through interviews with personnel
    2. Found to be entirely closed to GREAT III investigation except through IAS which was denied
E. National Register sites
    1. National Register printout reviewed for sites relevant to project
    2. Files of relevant sites pulled and copied
    3. Site or district boundaries mapped in red
F. Illinois Historic Landmark sites
    1. Received copies of reports from DHS
    2. Reviewed for relevant sites
    3. Mapped and recorded data
G. Illinois Historic structures inventory
    1. Received copies of reports from DHS
    2. Reviewed for relevant sites
    3. Mapped and recorded data

H. Final map preparation
   1. Method of transferring final data of 7.5 minute series U.S.G.S. quads working to 15 minute series scale base maps
      a. Working set of quads photographed with 35 mm color positive transparencies
      b. Placed in rear projecting light table developed for project
      c. Scale corrected to match base maps
      d. Final base map traced directly from projected image of 7.5 minute quads eliminating error due to scale changes
   2. Base map paper quality problems and solutions
      a. Only partially solved
      b. High absorbancy paper
         1. Produced fuzzy, eratic lines
         2. Blurred lettering that tends to fade out
         3. Standard technical pens could not be used
      c. Pen used - pilot - precise - new on market
         1. Micro-ball construction allows only a small amount of ink on the ball to reach the paper
         2. Contains excellent quality ink
         3. Did not totally eliminate problem
      d. All lettering was made on prepared surface
         1. Surface prepared with Eagle "Prismacolor" non photo blue 919 serries pencil to reduce absorbancy
         2. Lettering pen Koh-i-Noor loaded with quick drying plotter ink
         3. Allowed hand lettering with limited success
         4. Mechanical lettering devices could not be used
      e. Paper composition
         1. Irregular
         2. Coarse
      f. Permancy is poor and a noticeable yellowing has occurred
      g. Recommendation
         1. Base maps printed on drafting film and data transferred with standard technical pens
         2. This would provide a permanent base map set which could be basically edited, updated, and printed
      i. Final site data recording
         1. Data from site form copies
            a. Transferred to standard site data sheet
            b. Site data sheet translated to computer cards
         2. Due to the inavailability of orginal site data no additions to or reinterpretations of recorded site data have been or should be made until the forms filed by the orginal investigators are open to review
            a. To avoid perpetuation of error
            b. To avoid contradiction of data possibly existing in the original document

APPENDIX F - SITE DATA SUMMARY SHEET INSTRUCTIONS

ERC/SITE DATA SHEET INSTRUCTIONS (Where data not available, or if not applicable, leave category blank)

1. Entry #: This number will be assigned at the completion of gathering all available site record information and differentiate sites by state and county (sequence of number will be county specific, similar to current ASM and IAS numbering system).

2. Site #: This entry will list the site number specified by the organization which designated the number. i.e., a Missouri site number example - 23LN103 - 23 = Missouri, LN = Lincoln County, 103 is the site number in sequence within Lincoln County.

3. Name: Several sites are given a name by the recorder or perhaps a general name used by area residents (i.e. Beckwith's Fort/Towosahgy - 23 MI2). Where such a name is given, the name is entered in this space.

4. Township: The legal description Township entered here.

5. Range: The legal description Range entered here.

6. Section: The legal description Section entered here.

7. ¼ Sec.: The legal description ¼ Section entered here.

8. Zone: UTM Zone entered here.

9. UTM (N): UTM Nothing entered here.

10. UTM (E): UTM Easting entered here (where UTM's are not given on site forms, the site is plotted on a USGS and UTM's are reckoned and entered).

11. Site Size: Site size in meters, where given, is entered here. Where structure present or size not stated, not applicable is checked.

12. Time Period/ Cult.: Where information given, the appropriate period/culture is checked. Where the site is a multicomponent occupation, all components are checked.

13. Function: Where noted or obvious from description, function checked. Where more than one function present, check all that are applicable.

14. NRHP Status: Where explicit National Register status is noted, check appropriate line. Where no information as to status is available, check "Potentially elig."

15. Nat. Landm. Status: National Landmark Status. Check appropriate line.

16. Site Status: Where information is available as to the condition of the site, check the appropriate line.

17. Land Use-Current: Where information is given or can be interpreted from site description, check appropriate line.

18. Ownership: Check appropriate line.

19. Topography: Where specifically stated by the recorder, enter the designation on the appropriate line. All sites will be observed on the U.S.G.S. topographic sheet at completion of mapping and proper topographic designation entered. Preliminary analysis of site forms indicates high error rate. Terrain noted on U.S.G.S. will take precident over site form notation.

20. Archaeol. Features: Where noted, enter on appropriate line. Enter all features reported on site form.

21. Site Contents: Enter on appropriate line. Enter all materials listed on the form.

22. Architecture Style: Where listed or where obvious from description/photograph, list on appropriate line. List all styles noted but underline dominant style. Where vernacular, check appropriate line.

23. Vernacular: Vernacular architecture. Check appropriate line. 'Not applicable' if archaeological site or one of the traditional styles listed in 22.

24. No. of Storeys: Check appropriate line where information given or obvious from description/photograph. "Not applicable" for archaeological site.

25. Roof type (Mjr. form): Check appropriate roof type where given or obvious from description/photograph. Check major (Mjr.) form only.

26. Building Material: Check appropriate line. Use only major material except where it is apparent that more than one material is used on a relatively equal basis.

27. Soil: Check appropriate line where information given. Often soils are listed as silty clay loam, etc. Where this occurs, check all noted. Where specific soil name is given (such as Caruthersville, Cairo, Alligator, etc.) and general type is not given (fine sandy loam, silty clay, etc.), list the specific name in the comment section below for later interpretation.

28. Water Source: Check appropriate line where noted on site form. If more than one source present and noted on form, check nearest only. "Not applicable" for architecture.

29. Distance to Water: Where given in meters, list exact notation. Where given in feet, list feet and compute meters and add distance in meters. Place feet/yards/miles below line for meter notation.

30. Mo.drainage desig.: The Missouri DNR/HPP is utilizing a drainage system location map which is attached. List appropriate drainage (i.e., Miss.1, Miss.2, Miss.3, etc.)

31. Ill. drainage desig.: List Illinois drainage as indicated on the attached sheet.

32. Reporter Status: Where obvious (stated by form reporter), check appropriate line. Where name only given, check "Unknown" if the person is not known to be affiliated with one of the designations listed and write name of person in comment section below.

33. Record date: List date site form information observed (if stated). Otherwise, list date site form reported (if stated).

34. Level of Invest.: Level of Investigation: Following MO DNR/HPP designations, Phase I refers to intensive survey, Phase II refers to controlled testing, Phase III refers to extensive mitigation, and Preliminary refers to a percentage coverage reconnaissance. This designation will be used only for sites which have been recorded and reported by CRM.

35. Methodology: Applies only to CRM or sites reported in other literature/study reports. Where techniques of research - spacing intervals, shovel testing, etc. are noted, check "Explicitly stated." If method is only superficially stated (i.e., "the area was surveyed by pedestrian techniques ..."), check the "Stated (incomp.)" line. Where not stated, check appropriate line.

36. Locational Data: This refers to the quality of the site form notation of location in terms of presenting a map with the site location noted on it. Check appropriate line.

37. Bibliographic Entry: Where site form listed in Missouri, check ASM (Archaeology Survey of Missouri). Where listed in the Illinois Dept. of Conservation, check IDC. Where other repository (Illinois Museum, etc.) is the only source of the site form, write name of repository and check 3rd line.

38. Elevation (m.s.l.): Write elevation where given. Will add later from topographic maps if not given on form.

39. Other Important Characteristics: List any additional information which may be applicable in terms of the nature of the site.

Bibliographic Entry: Where site is noted, discussed in a CRM or other literature/ study report besides the official site form, list the proper bibliographic entry for the report.

Comments: List any additional information noted above. If there are problems interpreting or infering specific information from often ambiguous statements on site forms, make a note of the problem(s).

APPENDIX G - STEAMBOAT WRECK TABLE

NAME OF BOAT	LOCATION OF SINKING	DATE SUNK	REASON
Telegraph	----------	20 Dec 1817	struck a sawyer
Telegraph	----------	1 Nov 1820	burned
General Jackson	40 miles below St. Louis	27 June 1821	hit a snag
Hecla	20 miles above point Chiko	27 Sept 1821	boiler exploded
James Ross	St. Louis	26 Feb 1823	crushed by ice
Mars	below mouth of Missouri River	12 Mar 1823	hit a snag
Tennessee	below mouth of Missouri River	12 Mar 1823	hit a snag
Cincinnati	2-3 miles below Ste. Genevieve	19 Nov 1823	hit submerged log
Andrew Jackson	few miles above Clarksville	11 Apr 1825	collision
Eclips	few miles above Clarksville	11 Apr 1825	collision
Teche	15 miles below Natchez	9 May 1825	boiler explosion
Putnam	3 miles below Point Chicot	26 Jan 1826	ran aground, hit a snag
America	Plumb Point	29 Nov 1827	hit a snag
Car of Commerce	----------	27 May 1828	boiler burst
Pilot	Ste. Genevieve	23 Dec 1828	sprung a leak
Talisman	St. Louis port	late Apr 1832	burned
Missouri Belle	----------	24 Oct 1834	collision
Ben Franklin	below St. Louis	2 Mar 1938	----------
Warren	below St. Louis	2 Mar 1928	----------
Missouri	St. Louis, Walnut St.	21 Aug 1841	burned
Shepherdess	just above Carondelet	13 Jan 1844	hit a snag

Star Spangled Banner	Devil's Island, Cape Girardeau	14 Aug 1845	hit a snag
Lexington	----------	25 Sept 1845	hit a snag
Henry Bry	----------	22 Nov 1845	hit a snag
West Wing	Rush Tower Island	11 July 1846	hit a snag
Talison	Cape Girardeau	27 Mar 1847	collision
Tempest	Cape Girardeau	27 Mar 1847	collision
Sea Bird	½ mile below Cape Girardeau	14 Jan 1848	exploded
Avalanche	St. Louis, Washington St. levee	10 Mar 1848	burned
Hiberian	St. Louis, Washington St. levee	10 Mar 1848	burned
J.J. Hardin	St. Louis, Washington St. levee	10 Mar 1848	burned
Laclede	St. Louis, Washington St. levee	10 Mar 1848	burned
Charter Oak	100 miles south of St. Louis	11 Apr 1848	burned
Mail	St. Louis wharf	9 May 1848	burned
Missouri Mail	St. Louis wharf	9 May 1848	burned
Lightfoot	St. Louis wharf	9 May 1848	burned
Mary	St. Louis wharf	9 Mau 1848	burned
Edward Bates	90 miles above St. Louis	12 Aug 1848	collapsed a boiler flue, exploded
Highlander	above Cherry St. St. Louis	2 May 1849	burned
Algoma	St. Louis	29 July 1849	burned
Dubuque	St. Louis	29 July 1849	burned
Phoenix	St. Louis	29 July 1849	burned
Mary	St. Louis	29 July 1849	burned
San Francisco	St. Louis	29 July 1849	burned

American Eagle	St. Louis wharf	17 May 1849	burned
Alice	St. Louis wharf	17 May 1849	burned
Alexander Hamilton	St. Louis wharf	17 May 1849	burned
Acadia	St. Louis wharf	17 May 1849	burned
Boreas, No. 3	St. Louis wharf	17 May 1849	burned
Belle Isle	St. Louis wharf	17 May 1849	burned
Eliza Stewart	St. Louis wharf	17 May 1849	burned
Eudora	St. Louis wharf	17 May 1849	burned
Edward Bates	St. Louis wharf	17 May 1849	burned
Frolic (tow boat)	St. Louis wharf	17 May 1849	burned
General Brook (tow boat)	St. Louis wharf	17 May 1849	burned
Kit Carson	St. Louis wharf	17 May 1849	burned
Mameluke	St. Louis wharf	17 May 1849	burned
Mandan	St. Louis wharf	17 May 1849	burned
Montauk	St. Louis wharf	17 May 1849	burned
Martha	St. Louis wharf	17 May 1849	burned
Prairie State	St. Louis wharf	17 May 1849	burned
Red Wing	St. Louis wharf	17 May 1849	burned
St. Peters	St. Louis wharf	17 May 1849	burned
Sarah	St. Louis wharf	17 May 1849	burned
Taglioni	St. Louis wharf	17 May 1849	burned
Timour	St. Louis wharf	17 May 1849	burned
White Cloud*	St. Louis wharf	17 May 1849	burned

*White cloud started the fire in which the above 23 boats were burned. "White Cloud started, spread to and destoyed" the remainder. "Fire extended from head of levee to Duncan's Island, heat and sparks set fire to buildings on shore" Liberty Weekly Tribune, May 25, 1849, 2-4.

Algoma	St. Louis	10 Aug 1849	burned
Pheonix	St. Louis	10 Aug 1849	burned
Mary	St. Louis	10 Aug 1849	burned
San Francisco	St. Louis	10 Aug 1849	burned
Dubuque	St. Louis	10 Aug 1849	burned
St. Joseph	----------	15 Feb 1850	exploded
Kate Kearney	----------	28 Sept 1850	boiler exploded
Andrew Jackson	Illinoistown	7 Aug 1850	burned
St. Louis	St. Louis	23 Feb 1851	exploded
Sultana	Mullanphy Street, St. Louis	12 June 1850	burned
Oregon	Island 82	2 Mar 1851	exploded
Glencoe	St. Louis	4 Apr 1852	boiler exploded
Geneva	4 miles below Alton	11 Dec 1852	boiler exploded
New England	St. Louis wharf	18 Jan 1853	burned
Brunette	St. Louis wharf	18 Jan 1853	burned
New Lucy	St. Louis wharf	18 Jan 1853	burned
Bluff City	St. Louis Levee	27 July 1853	burned
Col. Crossman	2 miles below New Madrid	4 Feb 1853	boiler exploded
Lunette	St. Louis	13 Oct 1853	burned
Robert Campbell	St. Louis	13 Oct 1853	burned
Montauk	St. Louis	13 Oct 1853	burned
Kate Kearney No. 1	St. Louis	16 Feb 1854	boiler burst
Reindeer	channel near Evansville	24 Mar 1854	collapsed boiler flue
Pike	----------	19 May 1854	hit a snag
Princeton	near Fort Adams	27 Oct 1854	burned
Twin City	St. Louis wharf	7 Dec 1855	burned

Parthenia	St. Louis wharf	7 Dec 1855	burned
Prairie City	St. Louis wharf	7 Dec 1855	burned
St. Clair	St. Louis	5 July 1856	burned
Saranak	St. Louis	5 July 1856	burned
Southerner	St. Louis	5 July 1856	burned
Paul Anderson	St. Louis	5 July 1856	burned
James Stockwell	St. Luis	5 July 1856	burned
Winchester	10 miles above St. Louis	17 Oct 1856	struck a rock
Col. Crossman	newar New Madrid	19 Feb 1858	boiler burst
Australia	St. Louis	1 April 1859	burned
Edinburgh	Bloody Island	15 May 1859	burned
New Monongahela	Bloody Island	15 May 1859	burned
H.D. Bacon	St. Louis	27 Oct 1862	burned
A.McDowell	St. Louis	27 Oct 1862	burned
W. H. Russell	St. Louis	27 Oct 1862	burned
L.L. McGill	St. Louis	27 Oct 1862	burned
Estella	St. Louis	27 Oct 1862	burned
Imperial	St. Louis	13 Sept 1862	burned
Hiawatha	St. Louis	13 Sept 1862	burned
Jesse K. Bell	St. Louis	13 Sept 1862	burned
Post-Boy	St. Louis	13 Sept 1862	burned
Chancellor	St. Louis	4 Oct 1863	burned
Forest Queen	St. Louis	4 Oct 1863	burned
Catahoula	St. Louis	4 Oct 1863	burned
Maria	Carondelet	8 Dec 1864	blown up
Jennie Lewis	St. Louis	19 Nov 1864	crushed by ice
Illinois, No. 2	St. Louis	19 Nov 1864	crushed by ice

Jeanie Deans	Carondelet Dock	12 May 1864	burned
Ida Handy	----------	2 June 1866	burned
Bostona	----------	2 June 1866	burned
James Raymond	----------	2 June 1866	burned
Magnolia	St. Louis	13 June 1866	burned
Dictator	St. Louis	26 Feb 1866	burned
Leviathan	St. Louis	26 Feb 1866	burned
Peytona	St. Louis	26 Feb 1866	burned
Luna	St. Louis	26 Feb 1866	burned
Frank Bates	St. Louis	7 Apr 1866	burned
Fanny Ogden	St. Louis	7 Apr 1866	burned
Alexander Majors	St. Louis	7 Apr 1866	burned
Effie Deans	St. Louis	7 Apr 1866	burned
Nevada	St. Louis	7 Apr 1866	burned
New Admiral	St. Louis	16 Dec 1865	crushed by ice
Old Sioux City	St. Louis	16 Dec 1865	crushed by ice
Empire City	St. Louis	16 Dec 1865	crushed by ice
Calypso	St. Louis	16 Dec 1865	crushed by ice
Highlander	St. Louis	16 Dec 1865	crushed by ice
Geneva	St. Louis	16 Dec 1865	crushed by ice
Metropolitan	St. Louis	16 Dec 1865	crushed by ice
Gray Eagle	St. Louis	19 Dec 1866	----------
Bell of Memphis	St. Louis	12 Jan 1866	crushed by ice
John Tiendly	St. Louis	12 Jan 1866	crushed by ice
Prairie Rose	St. Louis	12 Jan 1866	crushed by ice
Julia	St. Louis	12 Jan 1866	crushed by ice
Warsaw	St. Louis	12 Jan 1866	crushed by ice

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Underwriter, No. 8	St. Louis	12 Jan 1866	crushed by ice
Omaha	St. Louis	12 Jan 1866	crushed by ice
Nebraska	St. Louis	13 Jan 1866	crushed by ice
City of Pekin	St. Louis	13 Jan 1866	crushed by ice
Hattie May	St. Louis	13 Jan 1866	crushed by ice
Diadem	St. Louis	13 Jan 1866	crushed by ice
Viola Belle	St. Louis	13 Jan 1866	crushed by ice
Reserve	St. Louis	13 Jan 1866	crushed by ice
Rosalie	St. Louis	13 Jan 1866	crushed by ice
Mexico	St. Louis	20 Jan 1867	burned
R. C. Wood	Carondelet	26 Jan 1867	sunk
E. H. Fairchild	Carondelet	26 Jan 1867	sunk
Tom Stevens	St. Louis	6 Feb 1867	sunk
White Cloud	St. Louis	I3 Feb 1867	sunk
Governor Sharkey	St. Louis	13 June 1867	sunk
G. W. Graham	St. Louis	10 Sept 1867	burned
Yellowstone	St. Louis	10 Sept 1867	burned
Illinois	St. Louis	27 Sept 1867	exploded
Anna White	St. Louis	4 Feb 1868	crushed by ice
Clara Dolsen	St. Louis	4 Feb 1868	burned
Kate Putnam	near St. Louis	22 Feb 1868	sunk
Paragon	near Cape Girardeau	29 Feb 1868	sunk
M. S. Mehpam	St. Louis Levee	2 Mar 1868	burned
Fannie Scott	St. Louis Levee	2 Mar 1868	burned
Kate Kinney	St. Louis Levee	2 Mar 1868	burned
George D. Palmer	St. Louis Levee	18 Apr 1868	burned
George McPorter	St. Louis harber	18 Apr 1868	sunk

Carrie V. Kountz	St. Louis	29 Mar 1869	burned
Gerard B. Allen	St. Louis	29 Mar 1869	burned
Ben Johnson	St. Louis	29 Mar 1869	burned
Henry Adkins	St. Louis	29 Mar 1869	burned
Jennie Lewis	St. Louis	29 Mar 1869	burned
Fannie Scott	St. Louis	29 Mar 1869	burned
Stonewall	St. Louis	28 Oct 1869	burned
Lady Gay	Grand Tower	19 Jan 1870	hit a snag
Fisher	St. Louis, Olive St.	28 Jan 1870	collision
East St. Louis	St. Louis, Olive St.	28 Jan 1870	collision
Oceanus	Hackett Bend, near Cairo	24 Apr 1872	explosion
Mollie Able	East St. Louis	8 Mar 1871	toranado
Jennie Baldwin	St. Louis	13 Dec 1876	crushed by ice
Bayard	St. Louis	13 Dec 1876	crushed by ice
Rock Island	St. Louis	13 Dec 1876	crushed by ice
Davenport	St. Louis	13 Dec 1876	crushed by ice
Fannie Keener	St. Louis	13 Dec 1876	crushed by ice
South Shore	St. Louis	13 Dec 1876	crushed by ice
Southern Belle	St. Louis	13 Dec 1987	crushed by ice
Grand Republic	St. Louis	19 Sept 1877	burned
Carondelet	St. Louis	19 Sept 1877	burned
Colossal	St. Louis	8 Mar 1878	burned
Exchange	St. Louis	8 June 1878	burned
Daisy	South St. Louis	27 Mar 1880	sunk
James Howard	St. Louis	13 Mar 1881	burned
Daisy (tug)	St. Louis	11 Apr 1881	exploded
Belle La Crosse	St. Louis	10 July 1882	burned
Northwestern	St. Louis	12 July 1882	burned
Gem City	St. Louis Levee	22 Sept 1883	burned

Recorded

Survey No.

ILLINOIS ARCHEOLOGICAL SURVEY

County
Twp.
Quadrangle
Location

Reg. Inst. No.
Culture
Type of site

Sec. Twp. Range

U.T.M.

Site owner
Site address
Previous owners
Present tenant
Directed to site by
Mapped by
Extent of site (area and depth)

Previous excavation
Pitting

ENVIRONMENT

Topography

Water supply
Drainage

Nearby sites
Modern occupation (building, plowing, etc.)

Type of soil
Ground cover

MATERIAL FROM SITE

Surface coll. Date Owners
Tested Date By whom
Excavated Date By whom
Nature and extent of collections

Study permission —
Study facilities

MATERIAL REPORTED AS BELONGING TO SITE

Owner of material
Certainty of origin

Photos
Site reported by Date
Survey report by Date Visited

Publications:

Study status:

Remarks:

Sketch map

ILLINOIS HISTORIC SITES SURVEY INVENTORY
LANDMARKS

1. NAME OF SITE:

   Common

   Historic

2. LOCATION:

   Street and Number | Township | Section

   City or Town | Zip Code | Range | ¼ Section

   County

3. CLASSIFICATION:

   Category (check one)

   ( ) District ( ) Building
   ( ) Site ( ) Structure

4. OWNERSHIP: Status (check one)

   ( ) Private ( ) Occupied
   ( ) Public ( ) Unoccupied
   ( ) Preservation work in progress

   Access to Public

   ( ) Yes ( ) Restricted ( ) Unrestricted ( ) No

   Present Use: (such as residential, commercial, etc.)

5. OWNERSHIP OF PROPERTY:

   Owner's Name | Phone Number

   Street and Number

   City or Town

   State | County | Zip Code

6. CONDITION:

   ( ) Excellent ( ) Good ( ) Fair ( ) Deteriorated
   ( ) Ruins ( ) Unexposed

   Is this the original site? ( ) yes ( ) no

   Briefly describe alterations to the building, structure, or site:

7. HISTORICAL THEMES: (check one or more of the following)

( )	Archaeological Site	(Pre-Columbian)
( )	Archaeological Site	(Post-Columbian to 1673)
( )	French influence	(1673-1780)
( )	Illinois Frontier	(1780-1818)
( )	Illinois Early	(1818-1850)
( )	Illinois Middle	(1850-1900)
( )	Illinois Late	(1900-present)
( )	Famous People	(give names & dates)

8. SPECIFIC DATE:

AREAS OF SIGNIFICANCE (check one or more of the following)

( )	Aboriginal (historic)	( )	LIterature
( )	Aboriginal (pre-historic)	( )	Military
( )	Agriculture	( )	Music
( )	Architecture	( )	Political
( )	Art	( )	Religion/Philosophy
( )	Commerce	( )	Science
( )	Communication	( )	Sculpture
( )	Conservation	( )	Social/Humanitarian
( )	Education	( )	Theater
( )	Engineering	( )	Transportation
( )	Industry	( )	Urban Planning
( )	Invention	( )	Other (specify)
( )	Landscape Architecture		

Brief statement of significance: (include all names and dates)
Use additional sheets if necessary. Also, please attach a black and white photograph to this form.

9. FORM PREPARED BY:

Name and Title: _____ Date: _____

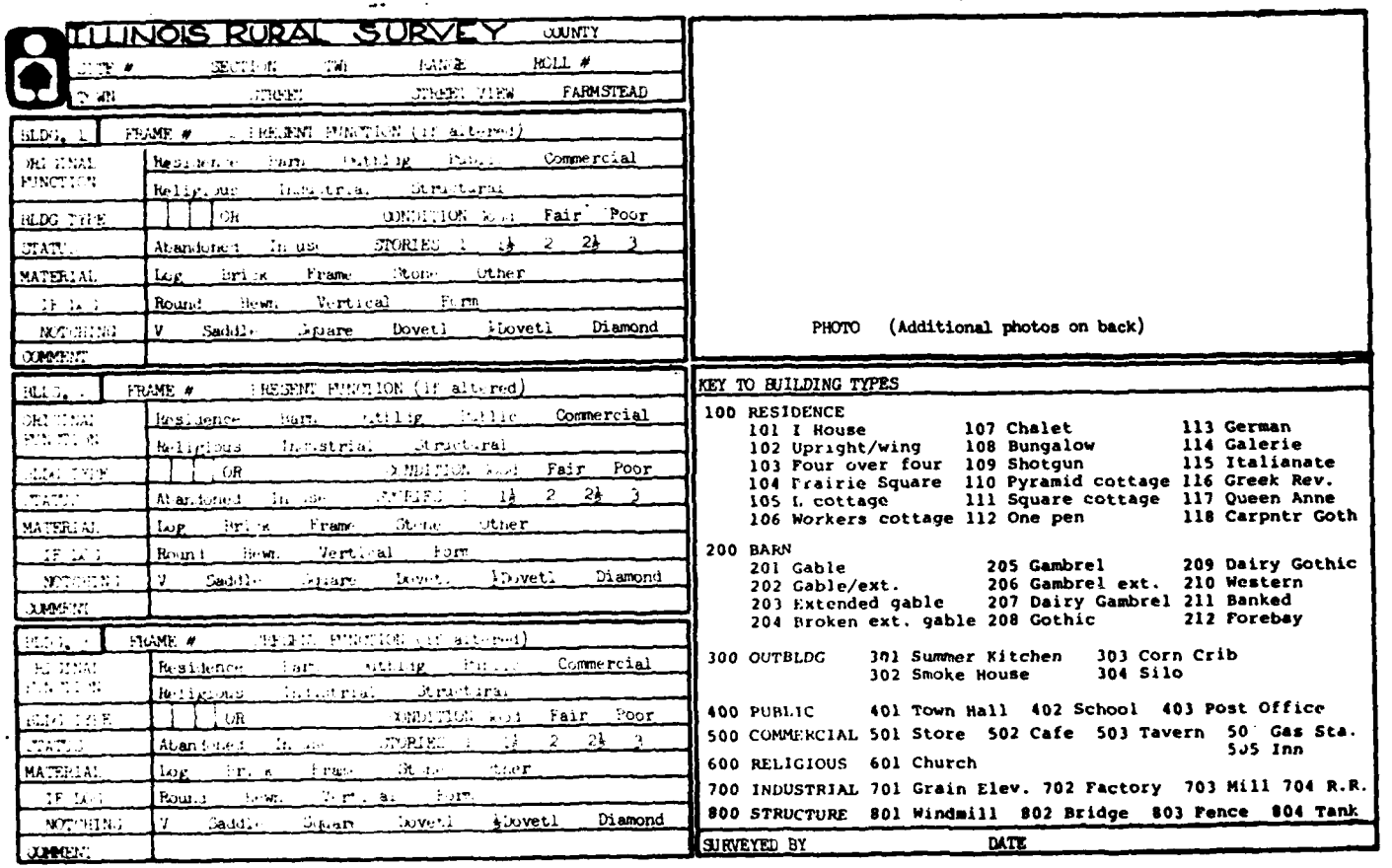
Organization: _____ Phone: _____

Street and Number: _____

City or Town: _____ County: _____ Zip Code: _____

During the course of the Survey we often find it necessary to search for a particular site. When filling out the Survey form, please list published references to the site for which forms are being completed. If a bibliography can be compiled, it will greatly deduct from the Survey's task.

Bibliography



ILLINOIS RURAL SURVEY

COUNTY

SURV # SECTION TWP RANGE ROLL #

TOWN STREET STREET VIEW FARMSTEAD

BLDG. 1 FRAME # PRESENT FUNCTION (if altered)

ORIGINAL FUNCTION: Residence Barn Outbldg Public Commercial
Religious Industrial Structural

BLDG TYPE OR CONDITION Good Fair Poor

STATUS: Abandoned In use STORIES 1 1½ 2 2½ 3

MATERIAL: Log Brick Frame Stone Other

IF LOG: Round Hewn Vertical Form

NOTCHING: V Saddle Square Dovetl Obovetl Diamond

COMMENT

PHOTO (Additional photos on back)

BLDG. 2 FRAME # PRESENT FUNCTION (if altered)

ORIGINAL FUNCTION: Residence Barn Outbldg Public Commercial
Religious Industrial Structural

BLDG TYPE OR CONDITION Good Fair Poor

STATUS: Abandoned In use STORIES 1 1½ 2 2½ 3

MATERIAL: Log Brick Frame Stone Other

IF LOG: Round Hewn Vertical Form

NOTCHING: V Saddle Square Dovetl Obovetl Diamond

COMMENT

BLDG. 3 FRAME # PRESENT FUNCTION (if altered)

ORIGINAL FUNCTION: Residence Barn Outbldg Public Commercial
Religious Industrial Structural

BLDG TYPE OR CONDITION Good Fair Poor

STATUS: Abandoned In use STORIES 1 1½ 2 2½ 3

MATERIAL: Log Brick Frame Stone Other

IF LOG: Round Hewn Vertical Form

NOTCHING: V Saddle Square Dovetl Obovetl Diamond

COMMENT

KEY TO BUILDING TYPES

100 RESIDENCE
101 I House, 102 Upright/wing, 103 Four over four, 104 Prairie Square, 105 L cottage, 106 Workers cottage, 107 Chalet, 108 Bungalow, 109 Shotgun, 110 Pyramid cottage, 111 Square cottage, 112 One pen, 113 German, 114 Galerie, 115 Italianate, 116 Greek Rev., 117 Queen Anne, 118 Carpntr Goth

200 BARN
201 Gable, 202 Gable/ext., 203 Extended gable, 204 Broken ext. gable, 205 Gambrel, 206 Gambrel ext., 207 Dairy Gambrel, 208 Gothic, 209 Dairy Gothic, 210 Western, 211 Banked, 212 Forebay

300 OUTBLDG 301 Summer Kitchen, 302 Smoke House, 303 Corn Crib, 304 Silo

400 PUBLIC 401 Town Hall, 402 School, 403 Post Office

500 COMMERCIAL 501 Store, 502 Cafe, 503 Tavern, 504 Gas Sta., 505 Inn

600 RELIGIOUS 601 Church

700 INDUSTRIAL 701 Grain Elev., 702 Factory, 703 Mill, 704 R.R.

800 STRUCTURE 801 Windmill, 802 Bridge, 803 Fence, 804 Tank

SURVEYED BY DATE

Illinois DOC/DHS Kural Survey Data Form

ARCHAEOLOGICAL SURVEY OF MISSOURI

Missouri Archaeological Society-University of Missouri-Columbia.

Owner/Address of Property _____

Tenant/Address of Property _____

Information current as of _____ date.

Site Description

Condition of Site. (If excavated—by whom, when, what was found, address of excavator, etc. If destroyed—by whom, when, what was found, address of destroyer. If preserved—by whom, when, how).

Affiliation of Reporter:
(Circle the number)

1—UMC
2—Other Educational Institutions
3—MAS Member
4—Non-educational Institution
5—Non-MAS, Private Individual

This information Supplied By:

Name: _____

Address: _____

_____

_____

Date: _____

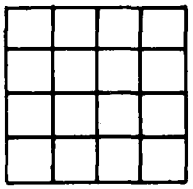
15 SWITZLER HALL UNIVERSITY OF MISSOURI COLUMBIA, MO 65211

2M 8 78

SKETCH MAP

Indicate the chief topographical features, such as streams and elevations. Also indicate houses and roads. Indicate the site location by enclosing the site area with dotted line. Note scale of map and portion of section included in sketch map. Include drawings, photographs, etc.

Indicate part of section included in sketch map.



N

W E

S

Scale: _____

THIS IS PROBABLY THE ONE MOST IMPORTANT PART OF THIS DATA FORM!

Please Attach **a copy of a topographic map with the site marked on it.**

County ______________________ Site Number ______________

Local Name/Number ______________________________

Location ______________ Sec. ______ Township ______ Range ______

Maps Used: ______________________________

1-USGS ______________ UTM: Zone ______/Northing ______________

2-County ______________ Easting ______________

3-Other ______________ NRHP ______________

Cultural Affiliation: ______________ Size of Site ______________ Meters

______________________________ Feet/Acres

Site Nature—General (Circle the numbers)

1 - Prehistoric
2 - Historic
3 - Protohistoric
4 - Prehistoric-Protohistoric
5 - Historic-Protohistoric
6 - Prehistoric-Protohistoric-Historic
6 - Historic-Architectural
8 - Other ______________

Site Nature—Specific

1 - Habitation-Prehistoric (Campsite, village)
2 - Mounds
3 - Burial Area
4 - Petroglyph/Pictograph
5 - Quarry
6 - Cave/Shelter
7 - Cairn
8 - Trail/Trace/Road
9 - Other ______________

10 - Residence
11 - Industrial
12 - Military
13 - Associated Farmstead Outbuilding
14 - Political/Governmental
15 - Church
16 - School

Water Source

1 - Spring
2 - Intermittant Stream
3 - Perennial Stream
4 - River
5 - Confluence of Water Courses
6 - Natural Lake
7 - Swamp/Bog
8 - Other ______________

Topographical Location

1 - Floor Plain (T-1)
2 - Stream Terrace (T-2)
3 - Stream Terrace (T-3)
4 - Slope
5 - Bluff
6 - Hilltop
7 - Other ______________

Material Reported

1 - Prehistoric
2 - Historic
3 - Both
4 - ?

Material Location

Is There a Collection? ______________

Where are the specimens stored? ______________

How was the site discovered? ______________

Contour Elevation ______________ Feet/MSL

Nearest Water

Name: ______________

Distance: ______________

Right or Left Bank of Stream
(looking downstream): ______________

Spring Nearby? How Far? ______________

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

Geomorphology/Land Forms/Soils

Faunal/Floral Remains

Remote Sensing/Sampling Techniques

Land Status When Reported
1 - Cultivated
2 - Pasturage
3 - Wooded
4 - Flooded
5 - Developed
6 - Other _____

Cultivation/Land Use Comments

Site Significance/NRHP Eligibility

Literature Sources

Description of Cultural Features

Drawings and/or photographs of artifacts

MISSOURI OFFICE OF HISTORIC PRESERVATION

ARCHITECTURAL/HISTORIC INVENTORY SURVEY FORM

1 NO.

2. COUNTY

3. LOCATION OF NEGATIVES

4. PRESENT LOCAL NAME(S) OR DESIGNATION(S)

5. OTHER NAME(S)

6. SPECIFIC LEGAL LOCATION
TOWNSHIP_____ RANGE_____ SECTION _____
IF CITY OR TOWN, STREET ADDRESS

7. CITY OR TOWN IF RURAL, VICINITY

8. DESCRIPTION OF LOCATION

9. COORDINATES UTM
LAT
LONG

10. SITE ( ) STRUCTURE ( )
BUILDING ( ) OBJECT ( )

11. ON NATIONAL REGISTER ? YES ( ) NO ( )

12. IS IT ELIGIBLE ? YES ( ) NO ( )

13. PART OF ESTAB. HIST. DISTRICT ? YES ( ) NO ( )

14. DISTRICT POTENTIAL ? YES ( ) NO ( )

15. NAME OF ESTABLISHED DISTRICT

16. THEMATIC CATEGORY

17. DATE(S) OR PERIOD

18. STYLE OR DESIGN

19. ARCHITECT OR ENGINEER

20. CONTRACTOR OR BUILDER

21. ORIGINAL USE, IF APPARENT

22. PRESENT USE

23 OWNERSHIP PUBLIC ( ) PRIVATE ( )

24. OWNER'S NAME AND ADDRESS IF KNOWN

25. OPEN TO PUBLIC ? YES ( ) NO ( )

26. LOCAL CONTACT PERSON OR ORGANIZATION

27. OTHER SURVEYS IN WHICH INCLUDED

28. NO. OF STORIES

29. BASEMENT ? YES ( ) NO ( )

30. FOUNDATION MATERIAL

31. WALL CONSTRUCTION

32. ROOF TYPE AND MATERIAL

33. NO. OF BAYS FRONT SIDE

34. WALL TREATMENT

35. PLAN SHAPE

36. CHANGES (EXPLAIN IN NO. 42) ADDITION ( ) ALTERED ( ) MOVED ( )

37. CONDITION
INTERIOR_____
EXTERIOR_____

38. PRESERVATION UNDERWAY ? YES ( ) NO ( )

39. ENDANGERED ? BY WHAT ? YES ( ) NO ( )

40. VISIBLE FROM PUBLIC ROAD ? YES ( ) NO ( )

41. DISTANCE FROM AND FRONTAGE ON ROAD

42. FURTHER DESCRIPTION OF IMPORTANT FEATURES

PHOTO MUST BE PROVIDED

43. HISTORY AND SIGNIFICANCE

44. DESCRIPTION OF ENVIRONMENT AND OUTBUILDINGS

45. SOURCES OF INFORMATION

46. PREPARED BY

47. ORGANIZATION

48. DATE

49. REVISION DATE(S)

RETURN THIS FORM WHEN COMPLETED TO: OFFICE OF HISTORIC PRESERVATION
P.O. BOX 176
JEFFERSON CITY, MISSOURI 65102
PH. 314-751-4096

IF ADDITIONAL SPACE IS NEEDED, ATTACH SEPARATE SHEET(S) TO THIS FORM

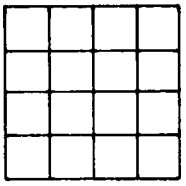
1. NO.
2. COUNTY
4. PRESENT LOCAL NAME(S) OR DESIGNATION(S)
5. OTHER NAME(S)
6. TOWNSHIP
RANGE
SECTION

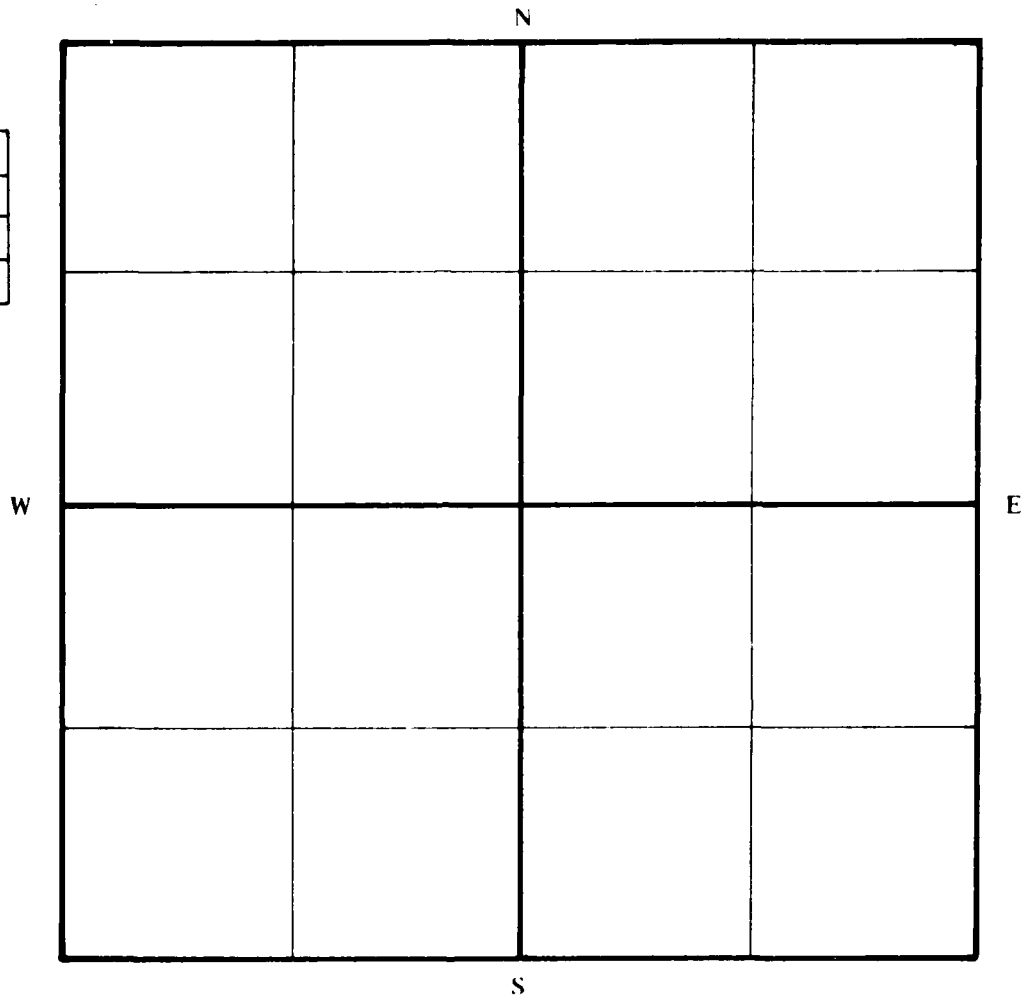
Sketch map of location Site No. _____

Section _____ Township _____ Range _____

Indicate the chief topographical features, such as streams and elevations. Also indicate houses and roads. Indicate the site location by enclosing the site area with dotted line. Note scale of map and portion of section included in sketch map. Include drawings, photographs, etc. on additional pages.

Indicate part of section included in sketch map.





Notes:

THIS IS PROBABLY THE ONE MOST IMPORTANT PART OF THIS DATA FORM!

Please Attach a copy of a topographic map with the site marked on it.

ERC/CRM RECORD SHEET

SITE NUMBER

DATE OF ENTRY

CARD 1

SITE # (1–8) NAME (10–19)

T'S. 1 (21–23) R'G. 1 (25–27) SECT. 1 (29–36) ¼ SECT. 1 (38)

T'S. 2 (40–42) T'G. 2 (44–46) SECT. 2 (48–55)

ZONE (57–58) UTM(N) (60–66) UTM(E) (68–73) TYPE [1] (79)

CARD 2

SITE # (1–8) SITE SIZE (10 x 13, 14 y 17)

TIME/C (19–38) FUNCTION (40–43)

NRHP (45) LANDM'K (47) STATUS (49) OWNER (51) TOPOGRAPHY (53–56)

FEATURE (58–73) TYPE [2] (79)

CARD 3

SITE # (1–8) SITE CONTENTS (10–19)

STYLE (21–22) VERNAC. (24) STORY (26) ROOF (28) BLDG. MAT. (30–31) SOIL (33)

WATER (35–36) DIST.-WATER (38–41) MO-DRN (43–44) IL-DRN (46–47) REPORTER (49)

INVEST. (51) METHOD (53) LOC.DATA (55) BIBLIO (57) ELEV. (59–61) TYPE [3] (79)

CRM BIBLIOGRAPHIC DATA SHEET

1. Entry #_____

2. State _____

3. County _____

4. Drainage _____

5. U.S.G.S. _____

6. Author_____
Firm/Affiliation_____

7. Conducted for_____
Contract #_____
Other # _____

8. Title _____

9. Investigation date _____ Published _____ Date _____

10. Level of Investigation
Preliminary Report ____
Literature Search ____
Phase I ____
Phase II ____
Phase III____
Other _____

11. Report Location _____
Catalogue # _____
File # _____
Other _____

12. Investigation Results _____
_____
_____

Comments:

APPENDIX J

Correspondence and Responses

ENVIRONMENTAL RESEARCH CENTER

719 HOUCHIN STREET
JEFFERSON CITY, MO. 65101
314-635-9569

CRAIG STURDEVANT, DIRECTOR

March 24, 1981

Dr. Charles Bareis
ILLINOIS ARCHAEOLOGICAL SURVEY
109 Davenport Hall
University of Illinois
Urbana, Illinois 61801

Dear Dr. Bareis:

Our company is currently under contract with the Corps of Engineers, St. Louis District to carry out the cultural resource overview component of the Mississippi River GREAT III project. Our primary tasks include 1) indicating all previously recorded archaeological, architectural, and historical sites from Saverton to Cairo within a corridor beginning one mile outward from each side of the Mississippi River bluff line on Corps base maps of the GREAT III area, 2) construction of an annotated bibliography of resources pertaining to project zone cultural resources, and 3) development of a computerized system for the data.

Since we are located in Missouri, the study has concentrated on Missouri resources in an attempt to iron out unforeseen problems and to develop the organizational guidelines necessary to carry out such a project. At present, we have completed almost all work in Missouri and are beginning the Illinois portion of the project. In order to carry out the project we need to observe those site records in the IAS which pertain to the GREAT III study area.

We will be working at St. Louis Corps offices and Illinois SHPO for the next several weeks and will give ample warning prior to visiting your repository. Please notify us if there are any prerequisites necessary for observation of IAS records.

Thank you for your time and I hope to meet with your soon.

Sincerely yours,

Craig Sturdevant/ERC

cc. Judith Deel
GREAT III Work Group Leader

Terry Norris
St. Louis District, Corps of Engineers

ILLINOIS ARCHAEOLOGICAL SURVEY

109 DAVENPORT HALL UNIVERSITY OF ILLINOIS URBANA, ILLINOIS 61801

Cooperating Institutions:
University of Illinois
Southern Illinois University
Illinois State Museum

March 30, 1981

Mr. Craig Sturdevant,
Director
Environmental Research Center
719 Houchin Street
Jefferson City, Missouri 65101

Dear Mr. Sturdevant:

I have received your letter of March 24 requesting access to the site files of the Illinois Archaeological Survey in conjunction with the GREAT III project of the U. S. Army Corps of Engineers.

Please be advised that the Illinois Archaeological Survey maintains a site file access policy governing the release of information from the files pertaining to both contract and non-contract archaeological work. In this contract case, information can be released to you as a planner from the Historic Sites Survey Part I Summary Reports or Predictive Model Studies Reports previously submitted to the Illinois Department of Conservation. Since you are working with the Illinois SHPO's office, you can obtain the same information from them in accordance with their policies. As an alternative, we can probably consider the release of site information on a density basis for the area in question. The density units will be no smaller than one square mile. Since the Illinois SHPO's office undoubtedly has a majority of the sites on file that the IAS has on file, I see no point in the duplication of research effort by our office. Therefore, if we can be provided with a list of the known sites for the Illinois project area recorded in the SHPO's office by counties from north to south in the Mississippi Valley, we can check our records to determine if additional data are available. We can then, provide the additional data on maps on a density basis only. Since the density approach was utilized and was adequate for the GREAT II project, it should be entirely adequate for the GREAT III project.

I believe that the above suggestions constitute a responsible form of assistance to your project under the guidelines of our

policy. We have a small staff, but I believe that the non-duplication of reporting effort should allow us to handle this work in relation to our current priorities. Not knowing the full range of data involved, I also can not estimate the length of time or costs, if any, might be involved for compiling the information.

In the meantime, I will transmit your letter to the Executive Committee of the IAS for further review and evaluation.

Cordially yours,

Charles J. Bareis
Secretary-Treasurer

cc: Executive Board

Illinois Department of Conservation
life and land legacy
605 W.M. G. STRATTON B...

December 21, 1981

Ms. Judith Deel
GREAT III Archaeologist
Division of Parks and
Historic Preservation
Missouri Department of
Natural Resources
P. O. Box 176
Jefferson City, MO 65102

Dear Judith:

I've finally gotten around to doing up my comments on the GREAT report. As an overall comment I think this report is adequate-a quantum leap forward from GREAT II. As this is a draft I assume that the numerous typos and misspellings will be cleared up. I also suggest that greater use be made of active constructions and simple declarative sentences.

In addition, I do have some specific comments. I have listed these for ease of (I hope) reference.

1. The authors frequently use cultural resource and archaeological site interchangably. This is a common failing amoung archaeologists. It is not only technically inaccurate it often proves confusing for non-specialists.

2. The author's assertion (p. 10) to the contrary not withstanding, our experience in Illinois indicates that a single inventory for all cultural resources is not efficient, and is only suitable for the most superficial review.

3. On page 15 (and later) the authors start using "predictive" in the sense of predicting the likelihood of encountering a site in a given area. The way their discussion is worded the reader will doubtless infer that they are using the term in a strictly scientific probablistic sense. A careful reading makes it clear that they are really referring to a intuitive "prediction" of site encounter probability.

The literature is replete with criticisms of such impressionistic modeling. Confusion of impressionistic and statistical models must particularly be avoided in a document such as the GREAT III report.

4. On page 15 the authors challenge the reliability of inventory forms that are duplicates of originals. It is not clear why they regard the forms as unreliable.

5. The flow chart in Figure 8 (although an accurate reproduction of my original) is in error. A copy of the corrected chart is enclosed.

6. The last time I checked the Wisconsin was the last glacial episode (see p. 37).

7. The authors make it clear that there was insufficient data to include all sites in the computer inventory, and even occasionally on the maps. This is no doubt the case but they should specify the criteria applied to the inventory forms in determining which forms could or could not be incorporated.

8. On page 70 the authors discuss site location as a function of topographic variables. They stress the location of major topographic features. Our experience in Illinois makes it clear that one can rarely rely upon the naming/description of topographic features by archaeologists. They seem to be poorly informed and unreliable observers/reporters of this variable.

9. In the discussion of federal law and regulations I note that there is no discussion of the C.O.E. regulations at all. This seems to be a rather glaring oversight.

I am generally disturbed that the recommendations of this report all seem to be from the GREAT III Report. I have no particular quarrel with any of the recommendations. I just wonder if something more could not have been done.

I hope these thoughts are of use to you. Let me know if I can be of further assistance.

Sincerely,

Alan S. Downer

Alan S. Downer
Staff Archaeologist
Historic Sites Division

ASD/bk

Illinois Department of Conservation
life and land together

605 WM. G. STRATTON BUILDING • 400 SOUTH SPRING STREET • SPRINGFIELD 62706
CHICAGO OFFICE – ROOM 100, 160 NO. LASALLE 60601
David Kenney, Director • James C. Helfrich, Assistant Director

November 23, 1981

Ms. Judith Deel
GREAT III Archaeologist
Missouri Department of
Natural Resources
P. O. Box 176
Jefferson City, MO 65102

Dear Judith:

I have read the draft of the Great III inventory study. It is a good summary of existing data. The maps would appear to be useful compilations only limited, as you observe, by the incompleteness of the data. It seems to be a very thorough study and I hope that it will be used by a number of agencies.

Sincerely,

Margaret K. Brown
Chief Staff Archaeologist
Historic Sites Division

MKB/bk

United States Department of Agriculture
Forest Service
Shawnee National Forest, Harrisburg, IL 62946

Reply to 2360

Date December 2, 1981

Judith Deel
Great III Archaeologist
Missouri Department of Natural Resources
Jefferson City, MO 65102

Dear Ms. Deel:

Thank you for providing us an opportunity to review and comment on the draft of the Great III cultural resource inventory report. Generally, the document is an excellent planning source which provides a comprehensive data base, an excellent bibliography and useful method for dissemination and updating new information. This cultural resource inventory is similar to cultural resource overviews conducted on National Forests for management and planning purposes.

There are several specific comments on the project and report which are as follows:

(1) When cultural resource projects involve National Forest lands the impacted agency should be notified to assure that proper records and documents are compiled and made available for review by the contracting archaeologist.

(2) There is no discussion about interagency cooperation and how Great III plans can be integrated into other cultural resource programs engaged in work within the project area.

(3) The report succinctly describes the needs for a consolidated repository of records in Illinois. A single statement to this effect would be sufficient.

(4) In the Legal Setting section, more discussion is needed on state and federal roles in CRM planning and implementation. Federal agencies, such as the Forest Service, have archaeologists directing the CRM program in cooperation with SHPO within context of agency land management planning. In addition, the Forest Service has a specific set of professional guidelines for CRM studies.

(5) *The Cultural Setting section is rather brief and general for prehistory and there is no discussion on ethnohistory of North American Indian groups.*

(6) *Figure 9 (page 34) is difficult to interpret with a mixture of taxonomic units and artifacts. There are regional taxonomic units for the Central Mississippi Valley (i.e., Dillinger, Raumond, Baumer, etc.) which are not identified. In addition, the Middle Woodland period in the Lower Missouri Valley II is identified and discussed by a variety of authors including Chapman 1968, Kay 1974, Johnson 1976 and Haas 1978. There is primary source data available.*

(7) *In Summary of Findings section, the CRM studies in Alexander, Jackson, and Union Counties should be expanded. It seems likely that there would be more sites in these Counties than the report indicates. In 1981, seventeen archaeological sites were determined ineligible on National Forest lands. This information can be obtained through the Forest Service office or through the State Department of Conservation.*

(8) *In the Recommendations, it should be mentioned that interagency coordination should be developed to implement and integrate plans developed at federal, state and local levels in the Great III project area.*

We would appreciate having copies of maps and records produced during the study which pertain to cultural resources on the Shawnee National Forest and a copy of the final report.

Hopefully, the enclosed comments will be useful for incorporation into the final report.

Sincerely,

Kenneth B. Henderson

KENNETH D. HENDERSON
Forest Supervisor

Department of Anthropology

WASHINGTON
UNIVERSITY
IN ST. LOUIS

December 16, 1981

Judith Deel
GREAT III Archaeologist
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Judy:

I have been pondering the Great III report. Until I recently received additional guidelines from your office I was uncertain how to appropriately evaluate it. The report is deficient in terms of failing to meet the necessary management requirements and because it lacks appropriate maps and bibliography.

In terms of the Scope of Work:
I. Description of the work to be accomplished ((1-b)) under the GREAT III contract calls for an explicit management procedure particularly with respect to four defined tasks. This is lacking in the current report. While there are some general management recommendations on pp. 85-95 in Volume I, and while the various sections of the report indirectly or implicitly deal with some of the required management procedure that needs to be developed, there is no explicit management procedure set forth. The development of such a procedure I understand was to be one of the major goals of GREAT III, so one can fault the report for lack of an explicit developed management procedure.

II. Tasks One and Two.
These two tasks appear to be completed for the most part. I am not clear regarding the completeness required for compliance with the scope of work. The bibliographies for CRM reports seem quite good, and their organization by county will certainly be a valuable tool for both field investigators and management personnel. The sections on previous research archaeology and on historic resources are acceptable, even though major sources are missing, but there is little on architectural surveys. On the other hand I cannot tell from the scope of work whether in fact this GREAT III report was to be a survey of all relevant literature, or just a more general review. I would assume it to be the latter, in which case I would find the CRM and archaeological reviews adequate, and would only suggest a little more effort on history. For example, for Missouri, several of the relevant atlases and county histories are missing. On the Missouri side of the river, at least in the metropolitan St. Louis area, the historical bibliographies are very thin; there are sources I consider essential which are not listed. But as noted, it may be that as they stand, they meet the scope of work. I leave that assessment up to the agency involved. Overall I find these county-by-county bibliographies to be the main strength of the GREAT III report.

shington University
mpus Box 1114
Louis, Missouri 63130
(314) 889-6252

III. Task Three requires a compliation of a series of USGS maps. Those are not included in my copy of the report. I am therefore unable to evaluate whether or not Task Three was addressed adequately or not. In terms of what I have in hand, since my copies have no maps, then Task Three is deficient.

I find the preliminary draft to have the strengths and weaknesses listed above. As narrowly defined, I believe the contractor has met Task One and Two requirements, but needs to develop an explicit management procedure. If Task Three was completed, it was not in my review copy. As indicated some more work on history and architectural references would be useful, and my comments of course assume that the deficiences in this draft already noted by the contractor on the last page of Volume 1 will be corrected.

Sincerely,

David L. Browman
Associate Professor

United States Department of Agriculture

Soil Conservation Service

555 Vandiver Drive
Columbia, Missouri
65201

November 12, 1981

Ms. Judith Deel
GREAT III Archaeologist
Missouri Department
of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Judy:

Thank you for the opportunity to review Volumes I and II of the GREAT III Cultural Resources Inventory. I found it to be generally well written and usable. Some suggestions to improve the documents for general readers follow:

1. Define acronyms such as CRM, DOC/DHS, ASM, IAS, DNR/HPP, NUAP, DHS, etc.

2. Page 11, line 14, probably more accurately stated as Cultural Resources Work Group Members.

3. Print on both sides of the page.

4. Maps showing surveyed areas could be released to the general public without specific site information.

5. The report needs good editing to fill in omissions, complete sentences and correct typo's.

6. I don't understand the need to separate Volume I, Appendix A, from Volume II.

7. A spot check on steamboat information, Vol. I, page 79, suggests inconsistencies and/or errors - see Scharf, 1883 excerpt attached.

I do not believe that the document as presented will be of much value to SCS planning except as a reference for contractors. An area surveyed map would make the report more usable. Recommendations or views on research or information needs would allow continuity and direction for future studies.

If you desire the return of the draft volumes, please call.

Sincerely,

Joe

Joe B. Marshall
Environmental Specialist

Attachment

SCS-AS

Southern Illinois
University at Carbondale
Carbondale, Illinois 62901

Center for Archaeological Investigations
618-536-5529

December 2, 1981

Ms. Judith Deel, Great III Archaeologist
Missouri Dept. of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Subject: Comments on Great III draft

Dear Ms. Deel:

I do have a number of specific and editorial-type comments on the Great III draft, but my main comments relate more to the general thrust of the Great III project. From my perspective, which includes several years working for a state archaeology office, the project has suffered from the beginning from an overemphasis on the creation of an archaeological inventory and, specifically, of a site file. The need for the Corps (and allied agencies) to develop and maintain their own comprehensive site file on the Mississippi River trench and the adjacent upland fringe has (to my mind) never really been justified. For planning purposes, these agencies need information on probable high and low density areas for cultural resources and a coherent framework to help evaluate the data that field investigations recover; what they do not need is a large file of mostly undigested data. A cultural resources inventory will never do away with the need for field inspection/investigation. The emphasis on the creation of a site file seems to be a throwback to an earlier phase of Anthropology: let's assemble all the facts and somehow there will be wisdom. An inventory is only as good as the people who use it; a high quality inventory in the hands of unskilled or indifferent people is just as much a problem (perhaps more so) as a poor inventory. The present project is a good example of generating facts but little knowledge. I would like to see less emphasis on an inventory and more emphasis on assessing the strengths and weaknesses of the data base, developing research frameworks for the region, developing strategies for evaluating significance, and setting management and research priorities. The present report addresses these concerns only slightly.

Perhaps I should apologize for being so cynical, but I wonder if the Corps and the other agencies realize that creating an inventory file is much like creating a Frankenstein monster. To be of any use, it must constantly be "fed". Given the vagaries of agency policy changes and funding priorities, one has to wonder if the Corps is willing to make the long-term financial committment required to maintain and constantly

update the computer file. These costs are considerable. If the file is not maintained, it becomes outdated very rapidly and the whole project will have become a boondogle.

A second area of general comment is on the Illinois situation with regard to site files. No one would argue that there isn't a problem, but the various sniping comments made in the report obscure rather than clarify the situation. The problems with the site file maintained by the state (IDOC) stem, in part, from the late date when the state finally began to undertake such a function and in part from the fact that IDOC has never allotted the manpower and resources to adequately maintain a state-wide survey file. The IAS file system was not created for nor was it ever intended to serve all the functions served by a publicly accessible file under the auspices of the SHPO. At several points in the report, the authors express their displeasure at the IAS refusing to provide site specific data to the project. That is understandable. While the IAS will not provide site specific data for such projects, that is, for this data to be turned over in toto to the agency, it will provide various kinds of generalized data that will allow one to assess low and high probability (density) areas. Ultimately, the issue is something of a red herring.

You have to remember that the IAS files are nothing more than the pooled information over a period of years from various archaeological programs in the state, and not all programs feed information to these files. The pre-HSS data are highly variable in quality. Much of the data that was inaccessible to this project is very old survey data and it is the least reliable and most incomplete information in the files. In many cases, one is better off trying to generate new data than relying on the old material. IDOC requires that survey forms be submitted for all reports that go through the SHPO for review. Beginning with the old HSS surveys, which dramatically expanded the site files, virtually all contract-generated survey data (and that is 90% of what goes on) should be either accessible to IDOC or in the IDOC files. If the IDOC files are a shambles, as this report implies, then there is a major need for IDOC to get its act together.

It should be pointed out that the IAS restricions on the bulk release of site location data to agencies or their contractors for generalized planning studies is not based on a lack of public spirit or an "academic indifference" to CRM needs. The IAS is acutely aware of the needs and difficulties, and, as the report notes, it is a ticklish, ethical problem. The parting comments on page 95 seem to go back to an assumption that a complete inventory necessarily makes for good management decisions and that the IAS files are the key to good management in the Great III Corridor. Unfortunately, the IAS file policy was derived from bitter experience with how such agencies, and especially the Corps, often use (misuse) archaeological data and deal with CRM problems, in general.

Also, as I tried to point out, access to the IAS files is at best a mixed blessing. For CRM planning purposes, the real need in Illinois is to beef up the IDOC file system.

Having begun on a sour note, let me go on to say that I do applaud the bibliographic compilation achieved by the project; I think that it is the most useful portion of the report and probably more valuable to the Corps than site file data. There are some curious omissions from the bibliography, but all in all, it is reasonably complete and certainly very handy. The historical section on the setting is good and quite useful as an overview, but I am puzzled why the prehistoric overview is only three pages. I was really disappointed by the short shrift given the prehistory. If one had to go just on the contents of the draft, it looks like the authors' primary expertise in the area is based on the reading of Chapman's book.

As for the report's recommendations, they are generally reasonable and appropriate, although these could have been drawn-up in 20 minutes by anyone familiar with the state of archaeology along this portion of the Mississippi River. Geomorphology studies are especially needed, not only to identify those areas where sites may be deeply buried, but also to identify those areas which represent very recently formed land surfaces and can only contain Euro-American materials. This, plus the sampling surveys and analysis of accessible site data, will provide the Corps a good idea of densities and probabilities of sites on various kinds of landforms. For planning purposes, this is far more useful than a large file of undigested and possibly unreliable survey data.

As for the bibliographies (archaeology and history), they seem reasonably complete. There are some important items on southern Illinois missing, but this is probably because the SIU-C library was not consulted (apparently). Morris Library also has good archival materials on some aspects of local history not duplicated in the State Library (the Allen papers, for example). In terms of the CRM bibliography, I noticed a couple of surprising omissions, specifically the archaeological surveys of Pere Marquette State Park (Jersey County, Illinois) and Giant City State Park (Jackson and Union Counties, Illinois). The former was done by FIA (Kampsville) and the latter by SIU-C. Both reports were done for IDOC.

Some specific items:

1. Table 3, first page: Jersey County, Illinois is omitted, the two reports by Farnsworth are for Jersey County.
2. Page 65: Mueller et al. should be Muller et al.

3. Appendix A CRM REPORTS
   Jackson County, Illinois, listing for ICGG testing report is incorrectly attributed to me as author. Author is Thomas Van Hoy. Same publication is correctly cited in the bibliography in second volume.
4. A number of the Illinois CRM entries were apparently taken directly off the IAS contract bibliography and still carry notations of "one copy, three copies, etc.". These notations refer to the number of copies on file with the IAS and make no sense in the context of the present bibliography. These should be deleted.

A last comment is that I was surprised that IDOT was not contacted. They have paid for large numbers of reports in the American Bottoms Area, and I believe these materials are accessible.

Regards,

Brian M. Butler
Assistant Director

RESPONSES TO REVIEWER COMMENTS

The reviewer' comments are reproduced in the original letters except where the statements were informally handwritten on notebook paper. The latter have been typed to include only those comments directed toward the present report. Where explicit instruction was included in the comments the appropriate change was initiated. Several of the reviews direct attention to philosophical issues involved in preservation in general. These are responded to only where suggestions were made which could be incorporated in the present report. Review comments are abbreviated under reviewer name and response follows each comment.

ST. LOUIS DISTRICT, CORPS OF ENGINEERS

1. Abstract should describe positive contribution of report.

Response: Agreed - change has been incorporated

2. Literature review "selective" - rationale for selection process.

Response: Discussed in method section.

3. The authors discuss problems encountered with access to various data sources. Since this situation has affected the quality of the end product, these experiences and results should be clearly stated.

Response: The results of data recovery problems are discussed throughout the text of the report. The actual experiences are recorded in the correspondence (cf. Bareis' letter) and in the Appendices which outline the procedures initiated in reference to specific problems.

4. P.L.96-515 The National Historic Preservation Act of 1980 not discussed.

Response: Noted and included.

5. The "Early Man" discussion beginning on p. 31 should include a discussion of recent Kimmswick (Mastodon State Park) investigation.

Response: The site has been discussed under the heading of Paleo-Indian given relative dating placement and artifact types.

6. Cultural setting - suggest incorporation of Settlement-Growth and Rivers and Rails sections under American Period.

Response: Agree, has been changed.

7. The authors should expand their discussion of the data base, particularly as it relates to the development of regional research designs and regional significance criteria.

Response: Noted and agree. Change has been included in and incorporated primarily within the Cultural Setting section of the report.

ILLINOIS DEPARTMENT OF CONSERVATION/DIVISION OF HISTORIC SITES (A. Downer)

1. Use of cultural resource and archaeological site interchangably is confusing.

Response: Agreed. We have attempted to be specific within the context of the sentence in which the concepts are utilized.

2. A single inventory for all cultural resources is not efficient and only suitable for the most superficial review.

Response: As discussed in the method section of the report, the single inventory was a response to the scope of work and Work Group direction. We agree that the product is not as effective as separate systems are in terms of the amount of data which can be incorporated. For planning purposes, however, it is more convenient. This is particularly true during initial planning stages of compliance related projects when location decisions are being made by persons not always involved in cultural resource management.

3. Authors use "predictive" in the sense of predicting the liklihood of encountering a site in a given area. Reader would infer a strictly scientific probablistic sense. Really referring to an intuitive "prediction" of site encounter probability. The literature is replete with criticisms of such impressionistic modeling. Confusion of impressionistic and statistical models must particularly be avoided in a document such as the GREAT III report.

Response: We agree that the uses of "prediction" should not be confused in the sense stated above. We disagree as to value of "impressionistic modeling" and certainly would not agree that predictive modeling in the strictly probablistic sense is even possible with archaeological data. The IDOC/DHS publication involving preditive models in Illinois (Brown 1981) certainly makes a case for inapplicability of prediction in the probablistic sense on the basis of too little data. Even granting a much larger data base, the most that can be hoped for would be a set of correlations which, we would argue, are basically impressionistic given the variability necessitated by all the steps, persons, etc. involved in the gathering of the archaeological data record. The use of "predictive" has been removed from page 15. Use of "predictive" in later sections is used almost entirely in the context of the Illinois predictive model studies (Brown 1981). It is standard usage, however, to state the name of the statistical model one is using when probablistic statements are being refered to and where such a model is not used it can be assumed that such an inference is not implied.

4. The authors challenge reliability of inventory forms that are duplicated. It is not clear why they regard the forms as unreliable.

Response: The statement has been removed from the report. We did, however, recover a great deal to substantiate the claim. It is apparent that when data forms are transcribed, data are transfered for other uses, etc. simple clerical error plays an important role. For example, ASM computer records often show incorrect legal descriptions which are found to be correct on the original form. DOC/DHS topographic maps show a large number of sites in areas not designated by the original site forms. We are not, of course, refering to simple copy machine duplication.

5. Flow chart in Figure 8 (although an accurate reproduction of my original) is in error. A copy of the corrected chart is enclosed.

Response: The copy was not enclosed and the figure was deleted in order not to create confusion.

6. The last time I checked the Wisconsin was the last glacial episode (see p. 37).

Response: Agree. The statement, however, refered to the last glacial entry into areas as far south as central-north Missouri. The change was made anyway.

7. Specify criteria for determining which site forms were placed on computer inventory and which ones were not.

Response: The criteria are discussed in the methods section. Basically, where we could not recover site numbers the site was not included on the computer inventory. The site location was, however, located on the topographic and base maps.

8. On page 70 the authors discuss site location as a function of topographic variables...Archaeologists seem to be poorly informed and unreliable observers/reporters of this variable.

Response: We agree. We also discuss this problem in reference to the inventory findings.

9. There is no discussion of the C.O.E. regulations at all. This seems to be a rather glaring oversight.

Response: The C.O.E. 33 CFR Part 305 which applies to cultural resource compliance was revoked September 30, 1981 (Federal Register/Vol. 46. No. 217/November 10 1981/Rules and Regulations). It is assumed that compliance currently falls under the appropriate federal regulations pertaining to federal properties and undertakings.

10. General comment concerning need for other forms of recommendations.

Response: We agree. We have expanded the recommendation section and added explicit suggestions. We still, however, feel as you do that there should be something more done. We initially put together several recommendations that were beyond the scope of federal requirements. These were discarded since they were more fantasy than reality. The final set of recommendations was based on the reality that laws are present which involve federal lands and jurisdiction and federal undertakings as these involve cultural resources.

ILLINOIS DEPARTMENT OF CONSERVATION/DIVISION OF HISTORIC SITES (M. Brown)

Thank you for your kind comments.

U.S.D.A. FOREST SERVICE, SHAWNEE NATIONAL FOREST, HARRISBURG, IL

1. When cultural resource projects involve National Forest lands the impacted agency should be notified to assure that proper records and documents are complied and made available for review by the contracting archaeologist.

Response: Noted.

2. There is no discussion about interagency cooperation and how GREAT III plans can be integrated into other cultural resource programs engaged in work within the project area.

Response: We are not aware of organized interagency cooperative programs involving cultural resources at the planning level. Although beyond the scope of the present project, it would be beneficial for federal agencies' environmental divisions to set up a clearinghouse of some type through which jurisdiction, compliance, data storage, etc. could be evolved at the federal level. This may, however, not be in the best interests of the individual states involved as defined by the SHPO. The scope of work specifically states that the sensitive data components of the study (maps, computer file) be stored at the St. Louis District, Corps of Engineers, DOC/DHS, and DNR/HPP.

3. The report succinctly describes the needs for a consolidated repository of records in Illinois. A single statement to this effect would be sufficient.

Response: We have attempted to limit our commentary on this subject.

4. More discussion is needed on state and federal roles in CRM planning and implementation...

Response: We have expanded this section to include such a discussion.

5. The Cultural Resource section is rather brief...

Response: We have greatly expanded this section.

6. Figure 9 (now 6) is difficult to interpret...Lower Missouri Valley II incorrect.

Response: The table has been "cleaned up" and is hopefully a useful general summary. The Lower Missouri Valley sequence has not been included in the final form since it is applicable more to the central portions of Missouri than to the GREAT III area.

7. CRM studies in Alexander, Jackson, and Union counties should be expanded...

Response: The report is based on the data we recovered while visiting your offices. The additional data held by the Forest Service should be included in the update of the GREAT III inventory.

8. In the Recommendations, it should be mentioned that interagency coordination should be developed to implement and integrate plans developed at federal, state and local levels in the GREAT III project area.

Response: Agreed and noted.

WASHINGTON UNIVERSITY IN ST. LOUIS, DEPARTMENT OF ANTHROPOLOGY
(D. Browman)

1. Bibliography should be expanded.

Response: This has been done. We hope we have included those references you consider essential.

2. Management procedures deficient.

Response: In some respects we agree with you. We strongly disagree, however, with your reasons noted for the proposed deficiency. You state "...there is no explicit management procedure set forth" and that this is a major goal of the project. The scope of work states that the management plan will be the product of the tasks as set forth. The issue is confusing. It is apparent that you believe that the document should present a step by step plan or set of plans for managing cultural resources within the GREAT III. There is a management plan, at least in terms of federal lands and federal undertakings, which is set forth in the laws and regulations pertaining to cultural resources involved in federal jurisdiction lands and projects. When cultural resources are recovered there is an explicit set of procedures required through regulatory action and law, we cannot change that even if we wanted to. The SHPO, National Register, and Advisory Council each play a part in determining significance, determining impact, and determining mitigation procedures if necessary. The GREAT III presents the previously recorded cultural resource record drawn from available recorded site forms and other documents. The maps, recommendations, computer file, and bibliography can all be used as tools for research management as we have recommended within the report. The SHPOs of Illinois and Missouri are in the process of completing state-wide preservation plans with input from cultural resource specialists knowledgeable of specific regions and their resources. The impetus for management, besides the legal aspect, will come from these documents, not from a review of recorded cultural resource documents which apply to a 5 to 10 mile corridor along the Mississippi River. There are cultural resources within the GREAT III which have been recorded. We attempted to establish an initial data base from which further project planning can be effectively contributed to through knowledge of areas that contain cultural resources. The data base is insufficient, and probably always will be, to establish any more than simple correlative probability statements utilizing site presence and environmental variables. If you are suggesting that our management plan should tell one what sites are significant and what sites are not, we strongly suggest that this can only be done on a site-by-site basis given the variability in the archaeological record. As we define "management procedure", we believe that the GREAT III inventory is a sound tool from which to identify cultural resources early in planning phases and for incorporation when Executive Order 11593 inventory is initiated in any major scale.

U.S.D.A. SOIL CONSERVATION SERVICE (J. Marshall)

1. Define acronyms.

Response: We have stated the complete phrase whenever acronyms are used. These are followed with the acronym to be used in parentheses.

2. Page 11, line 14, probably more accurately stated as Cultural Resources Work Group Members.

Response: Changed to reflect this.

3. Print on both sides of the page.

Response: We are to submit the original manuscript to the Corps for printing. It is assumed that this will be done.

4. Maps showing surveyed areas could be released to the general public without specific site information.

Response: We agree.

5. The report needs good editing...

Response: We definitely agree. We hope we have taken care of this problem.

6. I don't understand the need to separate Volume I, Appendix A, from Volume II.

Response: We agree. The change has been incorporated in final draft.

7. A spot check on steamboat information, Vol. 1, p. 79, suggests inconsistencies and/or errors - see Scharf, 1883...

Response: Additional data has been included in the table.

STAN RIGGLE

1. Several typos, spelling problems, mediocre to horrible grammar. Needs to be edited.

Response: We agree. We hope the editing has taken care of the problems.

2. Figure 7 needs flow direction indicators.

Response: Has been added.

3. Mapping might be better if black on white symboling used on overlays.

Response: You may be right. We have, however developed a relatively efficient system which does away with the expense and problems often encountered with overlays.

4. Prehistoric section disappointing.

Response: We agree. We hope that this has been remedied.

SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE/CENTER FOR ARCHAEOLOGICAL INVESTIGATIONS (B. Butler)

Dr. Butler's comments are primarily directed toward the philosophy involved in projects such as the GREAT III. While we agree with a number of the comments there is no means of incorporating them into the project following the agreed upon scope of work under which the project was initiated. The specific comments as to errors have neen noted and corrected.

APPENDIX K: NATIONAL REGISTER OF HISTORIC PLACE SITES AND DISTRICTS AND NATIONAL LANDMARKS IN THE GREAT III CORRIDOR

NATIONAL REGISTER OF HISTORIC PLACE SITES AND DISTRICTS AND NATIONAL LANDMARKS WITHIN THE GREAT III CORRIDOR (listed by state and county)

MISSOURI

Cape Girardeau County

GLENN HOUSE, 325 South Spanish Street, Cape Girardeau

OLIVER-FLEMING HOUSE (HOME OF THE MISSOURI STATE FLAG), 740 North Street, Cape Girardeau

TRAIL OF TEARS STATE PARK ARCHAEOLOGICAL SITE, (23CG37), NE of Oriole on Mississippi River, (NW SE, S. 14, T32N, R14E)

Determined Eligible for National Register

ARCHAEOLOGICAL SITE (23CG53), (Center, NW, S. 31, T30N, R13E)

Jefferson County

KIMMSWICK BONE BED, MASTODON STATE PARK (23JE334), (S. 8, T41N, R6E)

Lincoln County

Determined ELigible for National Register

OLD MONROE ARCHAEOLOGICAL DISTRICT (23LN2 - Survey 524, T48N, R2E), (23LN5 - Survey 1795, T48N, R2E), (23LN104 - Survey 1795, T48N, R2E) (also in St. Charles County)

ARCHAEOLOGICAL SITE (23LN97) (Survey 1760, T48N, R2E)

ARCHAEOLOGICAL SITE (23LN103) (Survey 1760, T51N, R2E)

Perry County

TOWER ROCK, 1 mile south of Wittenburg in Mississippi River (S. 20, T34N, R14E)

Pike County

None in GREAT III corridor

Ralls County

None in GREAT III corridor

St. Charles County

Determined Eligible for National Register

OLD MONROE ARCHAEOLOGICAL DISTRICT (23SC528) (Survey 578, T48N, R2E) (also in St. Charles County)

Ste. Genevieve County

BOLDUC, LOUIS, HOUSE, 123 South Main, Ste. Genevieve

COMMON FIELD ARCHAEOLOGICAL SITE, (23STG100), south of Ste. Genevieve (N½, SW, S. 35, T38N, R9E)

GUIBOURD, JACQUES DUBREUIL, HOUSE, NW corner of 4th and Merchant Streets, Ste. Genevieve

KREILICK ARCHAEOLOGICAL SITE ("Salt Pan Site"), (23STG5), 3 miles NW of St. Marry (SW, NW, S. 18, T37N, R10E)

STE. GENEVIEVE HISTORIC DISTRICT, Ste. Genevieve

St. Louis County

DES PERES PRESBYTERIAN CHURCH, (OLD STONE CHURCH), Geyer Road between Clayton and Manchester Roads., Frontenac

JEFFERSON BARRACKS HISTORIC DISTRICT, 10 miles south of St. Louis, (Lindberg, Telegraph, and Broadway) (T43N, R6E, & T44N, R6E)

Determined Eligible for National Register

JEFFERSON BARRACKS NATIONAL CEMETERY, 10 miles south of St. Louis (101 Memorial Drive) (T43N, R6E & T44N, R6E)

St. Louis City

ANHEUSER - BUSCH BREWERY, 271 Pestalozzi Street (National Landmark)

BISSELL STREET WATER TOWER, Junction of Bissell Street and Blair Avenue

BROWN, A.D., BUILDING, 1136 Washington Street

CAMPBELL, ROBERT G., HOUSE, 1508 Locust Street

CARONDELET HISTORIC RESOURCES EAST OF BROADWAY, ST. LOUIS (PARTIAL INVENTORY), this area includes Steins Street District, Steins St.; Otzenberger House, 7827 Reilly St.; Schilichtig House, 8402 Vulcan St.; Steins, Jacob, House, 7600 Reilly St.; Zeiss Houses, 7707-7708 Vulcan Street

CONVENT OF THE SISTERS OF ST. JOSEPH OF CARONDELET, 6400 Minnesota Avenue

EADS, BRIDGE, Spanning the Mississippi River at Washington Street (National Landmark)

FIELD, EUGENE, HOUSE, 5127 Waterman Boulevard (National Landmark)

GOLDENROD, 400 North Wharf St. (National Landmark)

GRAND AVENUE WATER TOWER (#1), Junction of East Grand Avenue and 20th Street

HADLEY-DEAN GLASS COMPANY, 701-705 North 11th Street

HOLY CROSS PARISH DISTRICT, 8115 Church Road

JEFFERSON NATIONAL EXPANSION MEMORIAL HISTORIC SITE, Mississippi River between Washington and Poplar Streets

LACLEDE GAS AND LIGHT CO., (LD), 1017 Olive Street

LACLEDE'S LANDING, Roughly bounded by Washington North 3rd, Dr. Martin Luther King Jr. Drive, and the Mississippi River

LAFAYETTE SQUARE, Area surrounding Lafayette Park

MAYFAIR HOTEL, 806 St. Charles Avenue

QUINN CHAPEL A.M.E. CHURCH, 225 Bowen Street

ST. FRANCIS DE SALES CHURCH, 2653 Ohio Street

ST. JOHN NEPOMUCK PARISH HISTORIC DISTRICT, 11th and 12th Streets between Carroll Street and Lafayette Avenue

ST. JOSEPH'S ROMAN CATHOLIC CHURCH (Shrine of St. Joseph), 1220 North 11th Street

ST. LIBORIUS PARISH DISTRICT, 1835 North 18th Street

ST. LOUIS AIR FORCE STATION (St. Louis arsenal), 2nd and Arsenal Streets

ST. LOUIS UNION STATION, 18th and Market Streets (National Landmark)

ST. MARY OF VICTORIES PARISH DISTRICT, 744 South Third Street

ST. STANISLAUS DOSTKA CHURCH, 1413 North 20th Street

SOULARD NEIGHBORHOOD HISTORIC DISTRICT, Roughly bounded by 7th Boulevard, Soulard, Lynch and 12th Streets

STONE HOUSES, 200-204 Steins Street

U.S. CUSTOM & POST OFFICE (OLD POST OFFICE), 8th and Olive Streets (National Landmark)

WAINWRIGHT BUILDING, 709 Chestnut Street (National Landmark)

WAINWRIGHT TOMB, Bellefontaine Cemetery, 4947 West Florissant Avenue

Determined Eligible for National Register

LYLE MANSION - Carondelet Park

O'FALLON PARK BOATHOUSE, O'Fallon Park

Pending for National Register

S.S. ADMIRAL (Excursion Boat)

ST. VINCENT DE PAUL CHURCH, 1417 South Ninth Street

Pending Determination of Eligibility for National Register

SOULARD FARMERS MARKET/RECREATION CENTER, Soulard Historic District

Scott County

None in GREAT III corridor

NATIONAL REGISTER - CONTINUED

ILLINOIS

Alexander County

CAIRO HISTORICAL DISTRICT, Cairo

MAGNOLIA MANOR, 2700 Washington Avenue, Cairo

OLD CUSTOM HOUSE, Washington and 15th Streets, Cairo

THEBES COURTHOUSE, off Illinois 3, Thebes

DOGTOOTH BEND MOUNDS AND VILLAGE SITE, South of Willard (11AX31)

Calhoun County

KAMP MOUND SITE, North of Kampsville

GOLDEN EAGLE - TOPPMEYER SITE, near Brussels (11C120-122)

SCHUDEL NO. 2 SITE, near Hamburg

Jackson County

CLEIMAN MOUND AND VILLAGE SITE, east of Rockwood on Illinois 3

GRAND TOWER MINING MANUFACTURING AND TRANSPORTAION COMPANY

Jefferson County

ELSAH HISTORICAL DISTRICT, Elsah

Jersey County

NUTWOOD SITE, Jersey County

Madison County

ALTON MILITARY PRISON SITE, corners of William, 4th, and Mill Streets, Alton

CHRISTIAN HILL HISTORIC DISTRICT, roughly boudned by Broadway, Belle, 7th, Cliff, Bluff, and State Streets, Alton

GUETLER HOUSE, 101 Blair Street, Alton

HASKELL PLAYHOUSE, Henry Street in Haskell Park, Alton

MIDDLETOWN HISTORIC ISTRICT, roughly bounded by Broadway, Market, Alton, Franklin, Common, Liberty, Humboldt, and Plum Streets, Alton

TRUMBULL, LYMAN, HOUSE, 1105 Henry Street, Alton

UPPER ALTON HISTORIC DISTRICT, Seminary Street, College, Leverett, and Evergreen Avenues, Alton

MITCHELL ARCHEOLOGICAL SITE, Mitchell

HORSESHOE LAKE MOUND AND VILLAGE SITE, Madison County

AMERICAN WOMEN'S LEAGUE CHAPTER HOUSES THEMATIC RESOURCES - Edwardsville, Madison County

POST OFFICE, Alton

MT. LOOKOUT (MCPIKE HOUSE), Alton

MADISON COUNTY SHERIFF'S RESIDENCE & JAIL, Edwardsville

LECLAIRE HISTORIC DISTRICT, Edwardsville

BERLEMAN HOUSE, Edwardsville

BENJAMIN GODFREY MEMORIAL CHAPEL, Madison County

Monroe County

FRENCH COLONIAL HISTORIC DISTRICT, From Fort Chartres State Park to Kaskaskia Island, Prairie du Rocher

GUNDLACH - GROSSE HOUSE, 625 North Main Street, Columbia

LUNSFORD-PULCHER ARCHEOLOGICAL SITE (11S290), Columbia vicinity

MAEYSTOWN HISTORIC DISTRICT, Maeystown

Pike County

BARRY HISTORIC DISTRICT, Pike County

Randolph County

MENARD, PIERRE, HOUSE, Fort Kaskaskia State Park, Ellis Grove vicinity

MODOC ROCK SHELTER (Multiple site numbers), 2 miles north of Modoc

CREOLE HOUSE, Market Street, Prairie du Rocher

FRENCH COLONIAL HISTORIC DISTRICT, from Fort Chartres State Park to Kaskaskia Island, Prairie du Rocher

KOLMER SITE (MICHIGAMEA VILLAGE), (11R124), north of Fort Chartres Island and west of Fort Chartres, Prairie du Rocher

FORT DE CHARTRES, treminus of Illinois 155, west of Prairie du Rocher, Fort Chartres State Park

CHARTER OAK SCHOOL HOUSE, west of Schuline

St. Clair County

EADS BRIDGE (sdd St. Louis City, Missouri)

LUNSFORD-PULCHER ARCHEOLOGICAL SITE (see Monroe County)

BELLVILLE HISTORIC DISTRICT, between E. S. Belt, Illinois, and Forest Streets, Belleville

CHURCH OF THE HOLY FAMILY, East 1st Street, Cahokia

JARROT, NICHOLAS, HOUSE, 1st Street, Cahokia

OLD CAHOKIA COURTHOUSE (FRANCOIS SAUCIER HOUSE), Corner of West 1st and Elm Streets, Cahokia

CAHOKIA MOUNDS (Multiple numbers), 7859 Collinsville Road, Collinsville

PENNSYLVANIA AVENUE HISTORIC DISTRICT, East St. Louis

Union County

STINSON MEMORIAL LIBRARY, 409 South Main Street, Anna

WILLARD HOUSE, 608 South Main Street, Anna

WARE MOUNDS AND VILLAGE SITE (11U231), west of Ware

Pending for National Register

LINN HEILIG ARCHEOLOGICAL SITE (11U26, 11Ur83)

APPENDIX L: St. Louis Landmarks, Missouri Historic Building Sites, and Illinois DOC/DHS Landmarks in the GREAT III Corridor

RECORDED STRUCTURES WITHIN THE GREAT III CORRIDOR BY STATE AND COUNTY (non-NRHP / National Landmark)

MISSOURI

Cape Girardeau

Giraroots Trading Post, (Missouri Historic Building Site Form) (MHB)
S. 28, T31N, R14E, Cape Rock

Cape Girardeau Historic District (reference, DNR/HPP ARVB-203)

Structures H4, H5 (reference DNR/HPP ARVB52), La Croix Creek

Perry County

Wrecked Water Craft - bank of Mississippi (no DNR/HPP MHB number), (reference McNerney 1980)

Ste. Genevieve County

23STG124 (Old Ste. Genevieve, *Historic Archaeology*)

Jefferson County

Festus/Crystal City Area

Gamache Ferry (1776-1896)

St. Louis County (St. Louis Landmarks on, determined eligible, or pending for NRHP and National Landmark not repeated in following listing)

Old Cathedral (1834), St. Louis Landmark (SLL) # 3

Chatillon Demenil Mansion (1849-1863), SLL # 5

Century Public Library (1907-1912), SLL # 19

Lyle Mansion, Carondelet Park, SLL # 22

Carondelet Branch Library, SLL # 24

Water Intake Tower, In Mississippi Channel (Tower # 1 - 1894, Tower # 2 - 1913), SLL # 25

Cupples Station (1893-1894), SLL # 28

City Hall (1893-1904), SLL # 29

Christian Peper Building (1874), SLL # 31

St. Vincent DePaul Church (1844), SLL # 32

Cenenary Methodist Church (1844), SLL # 33

St. John the Apostle and Evangelist Church (1958), SLL # 34

ISouth Broadway Bluff Area (1890's), SLL # 43

James L. Clemens House (1860), SLL # 44

Walz House (1849), SLL # 45

Ashley Street Power House, SLL # 46

William Harris Row, 18th St., Lasalle, and Hickory, SLL # 48

Peter and Paul Church and Buildings, SLL # 50

Neighborhood Gardens Apartment Complex, 7th, 8th Biddle, O'Fallon (1935), SLL # 64

Store Buildings, 7121-7129 South Broadway (1872), SLL # 67

Lemp Brewery Complex (1890's), SLL # 80

Bethlehem Lutheran Churhc (1895), SLL # 82

Jacob Stein House SLL # 85

Teh American Theater (1916-1918), SLL # 101

Somner House (19th century), 711 North 12th Street, SLL # 104

Most Holy Trinity Catholic Church (1897-1898), SLL # 105

Schlichtig House (1852), SLL # 107

Old Court House (1839-1851 and 1859, Dome 1862), SLL # 2

Union Trust Building (1892-1893), SLL # 30

Collection of Mercantile Library (1845-1851), SLL # 52

Chemical Building (1896), SLL # 86

Veterans Administration (1907), demolished 1977, SLL # 89

Old May Company Department Store Complex (1876-1905), SLL # 92

Missouri Valley Trust Company Building, 4rth and Pine (1896), SLL # 93

Merchants Laclede Building (1889), SLL # 94

Security Building (1890), SLL # 95

Old Mutual Bank (1917), SLL # 96

Towne Theatre (1896-1915), SLL # 97

Union Market (1924-1925), SLL # 98

Ambassador Theatre Building (1925-1926), SLL # 99

The Most Sacred Heart of Jesus Catholic Church (1898), SLL # 100

Missouri Atheltic Club (1915), SLL # 103

BE Hat Company Building (1899), SLL # 108

Gateway Merchandise Mart (1888), SLL # 109

Lammert Furniture Building (1897-1922), SLL # 110

Arcade/Wright Building (1907-1922), SLL # 111

S. G. Adams Printing and Stationary Company Building (1897-1898), SLL # 112

Homer G. Phillips Hospital (1932-1935)

Frederick Van Harten House (1896)

St. Charles County

Portage Des Sioux Trail (23SC5)

Lasouris Historic Indian Village (23SC6)

Lincoln County

Elsberry Historic District

USDA Soil Conservation - Elsberry Plant Materials Center, Structures (Sturdevant 1980)

Pike County

Farmstead and OUtbuildings (reference DNR/HPP AR-II-119)

RECORDED STRUCTURES CONTINUED (Illinois Historic Landmarks within the GREAT III Corridor). The following information has been directly typed from the Illinois Historic Landmarks Survey Interim Reports as produced by the Illinois DOC/DHS program. Where sites have been listed on NRHP and/or National Landmark, they are not reproduced in the following listing.

ILLINOIS

Alexander County

CAIRO

AL-H-1	Illinois Central Railroad Bridge	N end of Cairo across Ohio River	1886	Bridge
AL-H-2	St. Mary's Park and Theodore Roosevelt Bandstand	28th to 33rd Magnolia to Park	1865 1907	Early Public Park
AL-H-4	Halliday-Rendleman Home	2715 Washington Avenue	1865	Banker
AL-H-5	Herbert Home	2606 Washington Avenue	1876	
AL-H-6	Lansden Park and Civil War Cannon and Bunboat Flagpole	Intersection of Walnut & Holbrook		
AL-H-7	Walter Warder Home	2315 Holbrook Avenue		Lawyer, St. Senator
AL-H-8	Alexander County Courthouse	Washington Avenue 20th & Division	1865	
AL-H-9	1st Presbyterian Church	19th & Washington		
AL-H-10	A.B. Safford Memorial Library	1609 Washington	1883	Large Civil War Coll.
AL-H-11	Missouri-Pacific RR Passenger Depot	14th & Washington		
AL-H-13	Duncan Gun	1400 Washington		Civil War Cannon
AL-H-14	St. Patrick's Church	9th & Washington		
AL-H-16	Oscar Woods Home (Edwin Halliday Home)	424 9th Street	ca1870	Industrialist
AL-H-15	The Hewer (George Bernard)	9th & Washington		Bronze Statue
AL-H-17	Immanuel Lutheran Church	Douglas St. - W of Washington Ave.	1896	

AL-H-18	Maud Rittenhouse Home	703 Walnut		Author
AL-H-19	Reed Green Home	603 Walnut		Lawyer
AL-H-20	Church of the Redeemer	600 Washington	1862	
AL-H-21	St. Charles Hotel	2nd & Railroad Sts.	1890	
W-593/19	Residence	738 Center		
W-587/6	Drugstore	607 Commercial		
W-587/8	Ritz Hotel	611 Commercial		
W-588/3	Commercial	704 Commercial		
W-588/2	Commercial	706 Commercial		
W-587/36	Commercial	714 Commercial		
W-587/34	Cairo National Bank	800 Commercial	1918	
W-587/10	Commercial	801 Commercial		
W-587/31	Commercial	902 Commercial		
W-587/30	Commercial	908 Commercial		
W-587/14	Commercial	911 Commercial		
W-587/18	Clancy	1201 Commercial	1891	
W-587/29	ILL Central Railroad Station	1400 Commercial		
W-587/20	Municipal Fire Station	1711 Commercial		
W-587/23	Commercial	1807 Commercial		
W-592/6	Evangelical Lutheran Church	425 Douglas		
W-587/26	E. Bucher, Commercial	1907 Commercial		
W-587/25	Patier Block, Commercial	1901 Commercial	1891	
W-588/16	Cairo River & Rail Warehouse	1203 Ohio		
W-591/25a	Residence	1012 Walnut		
W-591/22a	Church	1900 walnut	1904	
W-591/21a	Residence	2008 Walnut		
W-589/23	State Armory, Ill. Nat. Gd.	410 Washington	1931	

J-H-2	Harris Farm House	NW 31-10s-3w 1870's	W.L.Harris, CW officer, guarded BIg Muddy Bridge against southern sympasizers for short time, came to Jackson Co. 1867
J-H-3	Boon Cemetery	SE 31-9s-3w 1854	Burial of B. Boon, first white child born in Jackson Co.

GRAND TOWER

J-H-4	Huthmacher House	N cor Main & Walker 1874	Built for T.W. Jenkins, miller, politician & grandson of early pioneer
J-H-5	Stone Building	Walker NE of	Claimed to be original Grand Tower post office, begun in 1855 with B.Boon as post master
J-H-6	Commercial Building	Front & Schickle	Simple board and batten frame bldg, very similar to old Grand Tower Item bldg.
J-H-7	East House	Front Nw of Walker	Has widow's walk overlooking Mississippi
J-H-8	Old Foundry Office	Front & Market 1890's	Massive vault in rear of bldg used as both residence and office.
J-H-9	Iron Foundry Ruins	Devils Backbone Park 1860's	Internationally known iron producers using coal from interior of Jackson Co.

NEUNERT

J-H-10	Christ Lutheran Church	N edge Main St. 1906	A product of the German settlers of the region

Jersey County

ELSAH (separate listing of structures within NRHP District)

JR-H-1	Lime Kiln Ruins	SE15-6n-11w ca.1850	Early Industry
JR-H-2	Elieston	Principia Campus 1889	Country home of wealthy H. Turner
JR-H-3	Riverview House	NE cor. LaSalle & Mississippi Streets 1847	Residence, added on 1865

JR-H-4	Onetto-Trovillion House	E. Side LaSalle, S. of Elm	Used as home, store, post office & museum
JR-H-5	Ice House Ruins	E. Side Mill, Elm 1865	
JR-H-6	Keyser-Reed House	W.Side Mill, No. of Elm 1859	Built and lived in by mason H.T.Keyser
JR-H-7	Schneider-Gent House	SW cor Alpa & Mill 1858	Addition 1897
JR-H-8	Deller Store	SE cor Alpa & LaSalle 1858	General store, then confectionary
JR-H-9	Hansell Copeland House	SW cor LaSalle & Palm 1858	Unchanged small stone house
JR-H-10	Village Hall	E. Side LaSalle, S. of Palm 1887	
JR-H-11	Bell-Grayson House	N. Side Palm, W. of LaSalle	Restored brick home of J. Bell, libery stable operator
JR-H-12	Union Hotel	E. Side LaSalle, S. of Selma 1859	Later used as a store
JR-H-13	Buggy Shop	E. Side Mill, Selma 1877	Built & operated by J. Reintges
JR-H-14	Reintges-Murphy House	W. Side LaSalle, S. of Selma 1853	Peter Reintges, stone mason built and lived there
JR-H-15	Stephany-Keller House	NW cor. Selma & Mill 1858	Many Additions to 1900
JR-H-16	Onetto-Clifton House	SW cor. Maple & Mill 1853	Built for blacksmith, W. Onetto
JR-H-17	Thiele-Connell House	W. Side Mill, No. of Maple 1890	Village Dr. B. Farley
JR-H-18	Farley Dance Hall	W. Side Mill, N. of Mapel 1858	Used as a general recreation hall.
JR-H-19	Keller-Robertson House	W. Side Mill, S. of Alma 1857	Built by a C.L.Keller. Mansard add. 1892
JR-H-20	Keller-Ward House	W. Side Mill, S. of Alma 1858	Small Stone
JR-H-21	Parsonage-Hake House	S. Side Valley, W. of LaSalle 1859	Methodist Parsonage

JR-H-22	Methodist Church	N. Side Valley, W. of LaSalle 1874	Small frame gothic
JR-H-23	Serini-Minarick House	S. Side Valley, End of street 1858	Stone house of Isaac Haupt, butcher & fisherman
JR-H-24	Elsah School	W. Side Mill, N. of Alma 1857	Rubble Stone
JR-H-25	Reintges-Singletary House	NE cor. Mill & Alma 1860	Frame house built by Peter Reintges
JR-H-26	Huss-Anderson House	E. Side Mill, N. of Alma 1858	Lawrence Huss, shoemaker
JR-H-27	Ward-Bunting	E. Side Mill, N. of Alma 1858	Clement J. Ward, carpenter
JR-H-29	McNair-Hosmer House	E. Side Mill, S. of Penn & Bridge 1859	William McNair, resided here in his 2 story brick & invented farm machinery
JR-H-28	McNair-McCall House	E. Side Mill, S. of Penn St. 1858	Another McNair family home
JR-H-30	Railway Tunnel Remains	S. of Penn, E. of Mill 1881	Jay Gould's Wabash Line began construction of this tunnel but had to use another means to get to inner level
JR-H-31	Greene-Allen House	E. Side Mill, No. of Penn 1859	Stone house of chairmaker & carpenter William Greene
JR-H-32	Schnieder-Lazenby House	E. Side Mill, N. of Penn 1858	Xavier Schnieder, a cooper had this store built and added a gothic style stone rear section 1877
JR-H-33	Mott-Condit House	W. Side Mill, N. of Penn 1881	B. Mott, Druggist had it built
JR-H-34	Village Inn	NE cor. LaSalle & Elm 1858	Originally residence, cupola added 1880
JR-H-35	Brock-Belote House	E. Side LaSalle, No. of Elm 1854	Additions in 1874

CHAUTAUGUA

JR-H-36	Chautaugua	NE18-6N-12W	1890	Closed resort town centered on the Lyceaum idea of the Chautaugua of the late 1800's. On the grounds are a number of elaborate summer houses, one being a Mexican Pavilion from the St. Louis Exhibition

GRAFTON

JR-H-46	Branard House	NW cor. Main & Brown	1890	C. Branard came in 1869 to run Grafton Quarry & later built this home
JR-H-47	Ripley House	NE cor. Main & Cherry	1840	Clapboard frame
JR-H-48	G.S. & T.C. Building	SE cor. Main & Cherry	1850	Main office for G. C. & T.C. Railroad
JR-H-49	Schulte's Store	SE cor Oak & Main	1858	One Store remains of former 2 story undertakers, tin & ice works
JR-H- 50	Godfrey Store	N. Side Main, W. of Cherry	1848	Large Greek revival store meeting hall
JR-H-51	Krank House	E. Side Oak, No. of Clinton		
JR-H-52	Monsignor Whalen House	E. Side Oak, No. of		Large stone house
JR-H-53	Rugel Hotel	S. Side Main, E. of Cedar	1870	Brick structure with stone carriage house in rear
JR-H-54	Grafton United Methodist Ch.	NE cor. Main & Vine		Early frame church also used for town meetings & Catholic services
JR-H-55	La March House	SW cor. Main & Maple	1845	One story stone
JR-H-56	Saloon	N. Side Main, W. of Sycamore		One story store with stone lean-to added
JR-H_57	Greenleaf Inn	N. Side Main, E. of Mulberry		Early small brick tavern with frame wing
JR-H- 58	Ernst Eisenberg House	SW cor. Main & Maple	1860	Home of early banker
JR-H-59	T. Kochschlott House	S. Side Main, E. of Mulberry		One story banked stone home of an early successful fisherman

JR-H-60	Rugel House	N. of Main, E. of York	Banked brick, two & three story house
JR-H-61	St. Patrick's Catholic Church	SW cor. clinton & Evans 1871	Placement and naming were a compromise between German & Irish Catholics of Grafton
JR-H-62	Olendorf House	S. Side Main, W. of Evans	Frame with double galleries
JR-H-63	Dr. Veech House	N. Side Clinton, W. of York	Stone house of the English immigrant who was 1st doctor
JR-H-64	Grafton Stone Arch Bridge	N. of Clinton, W. Side of Town	In danger
JR-H-65	Bray House & Horse Barn	NW Edge of Grafton	Farm complex includes barns, houses, & outbuildings & octagonal residense
JR-H-66	Pere Marquette School Camp	SW8-6N-12W 1930	Typical of early 20th century public works stonework
ERE MARQUETTE VICINITY			
JR-H067	Eastman/Wendell House	NW13-6N-13W	Stone house with double galleries
JR-H-68	Pere Marquette State Park	6N-13W	Largest park in Ill. with over 6000 acres of land situated on scenic bluffs. Lodge & other bldgs. good examples of CCC work in 1930's
JR-H-69	Rockhurst	SE4-6N-13W 1845	Stone house with double gallery
JR-H-70	Boyles Log Cabin	SE33-7N-13W	Saddle notching
GRAFTON VICINITY			
JR-H-71	Stone House Ruin	SE28-7N-13W	

Madison County

ALTON

MA-H-5	Confederate Cemetery	Rozier, 2 blks W of State 1862	Burial ground for Confederate Prisoners of War held at Alton Pen. 1,345 buried
MA-H-6	Post House	1516 State 1837	Wm. Post, Mayor of Alton 1859-1860
MA-H-7	Peter Wise House	1128 State 1859	P. & S. Wise, helped establish Alton River packet, 1858 built National Mills
MA-H-8	Old Cathedral	717 State 1855	See of second Ill. diocese 1857-1923
MA-H-9	Captain William Leyhe House	703 State 1879	Well-known sailor of Eagle Packet Co. 1880's
MA-H-10	J. M. Altoff House	424 Prospect 1841	Altoff was furniture dealer
MA-H-11	A. B. Sparks	410 Prospect 1835	3 additions to earliest section in rear
MA-H-12	Edward Goulding House	305 Prospect 1859	Early Alton jewler
MA-H-13	Mitchell House	310 Mill 1837	Built for Mitchel Bros., industrialists
MA-H-14	Sebastian Wise House	505 Bond 1854	See MA-H-7
MA-H-15	Carroll House	512 William 1838	M. W. Carroll, saddle & harness manufacturer
MA-H-16	Keating House	307 Carroll 1835	Ed. Keating, mayor of Alton
MA-H-17	Alton Penitentiary	W. of Williams, S. of 4th 1833	State Pen. abandonded 1857 Ruins remain
MA-H-18	Drury & Wead Co. Bldg.	308 Broadway 1866	Saddlery & farm implement store
MA-H-19	Lincoln Hotel	208 State 1841	
MA-H-20	Mansion House	506 State 1834	Hotel, site of last anti-slavery meeting before E. Lovejoy's death.

MA-H-21	Dr. Charles Davis House	517 State 1847	
MA-H-22	Col. Samuel Buckmaster House	514 State 1847	Buckmaster was important local & state poligical figure, a leader in raid on St. Louis arsenal
MA-H-23	E. Trenchery House	603 State 1835	
MA-H-24	Charles Wise House	607 State 1852	Peter Wise's 2nd house
MA-H-25	Synder Block	301 Piasa late 1800's	Turreted commercial bldg.
MA-H-32	Turner Hall	Fourth & Ridge 1867	Built by German Turnverein Society as cultural center for immigrants
MA-H-33	Lovejoy Monument	5th & Monument 1837	E. P. Lovejoy, abolitionist killed by pro-slavery mob in 1837 guarding printing press
MA-H-34	Timmermiere Residence	2423 Edwards early 1800's	Catholic retreat, site of 1st Catholic mass in Alton
MA-H-35	Loomis Hall	2800 College 1832	Rock Springs Seminary, re-named Shurtleff College
MA-H-36	Old Rock House	2705 College	Meetings of anti-slavery held here. Later underground RR
MA-H-37	Western Military Academy	2009 Seminary 1879	Begun as Wyman Institute for Boys, closed 1972
ALTON VICINITY			
MA-H-38	Piasa Bird	1 mi. NW of Alton	Reproduction of Indian painting

Monroe County

COLUMBIA VICINITY			
MO-H-14	Early Stone Barn	Survey 554, R10W T1S	
MO-H-15	Brick farm; barn & house	NE¼, S. 17, R10W T1S	

MO-H-16	Henry Payne Home	SE¼ S.9,R10W, T1S 1818	Uncovered log house still in use
MO-H-28	Zoar U.C.C. Church	NE¼ S.5,10W,2S 1862	Three levels of differing stone mark changes of materials during construction

VALMEYER VICINITY

MO-H-29	Stephen W. Miles Home	SW¼, S.24,11W 2S 1844	Home of important land owner
MO-H-30	John Moredock Cabin	Survey 771, 2S,11W 1790	Log, covered now. Home of Moredock, Indian fighter
MO-H-31	Dr. G.P. Livingston Home	Rt. 156 in Harrisonville	Collaborated in development of Tetnus shot

HECKER VICINITY

MO-H-69	Fults Home	Survey 311, Renault Grant 1829	
MO-H-70	Saltpetre Cave	SW¼ S.21, 10W,4S	
MO-H-71	Masterson's Rock	SE¼ S.7,10W,4S 1840	Benjamin Masterson, speculator's home
MO-H-72	Seth Chalfin Homestead	In Calfin Bridge 1796	Covered log home of early settler
MO-H-75	Struebig Place (DEMOLISHED)		

Randolph County

PRAIRIE DU ROCHER VICINITY

R-H-19	Log Building	County Rd. 7, S. of Monroe Co.	
R-H-20	House	Cty. Rd. 7 ½ mi. N Prairie du Rocher	French Style
R-H-21	Laurent/Defrosing House	½ mi. N of Prairie du Rocher on Prairie du Rocher Creek	French Style
R-H-22	Garage	¼ mi. N Prairie du Rocher W of Rt 155	Cut stone
R-H-23	Jesuit Plantation Site	1½ mi S. of Prairie Rocher	1770's?

R-H-24	French Style House	Across from Jesuit Plantation Site	
R-H-25	Barn	SW 30-T5S,R8W	Log central part
R-H-26	French Style House	SW 31-T5S-R8W	
R-H-27	Log House	NW 25-T5S-R9W	Abandoned
R-H-28	Log Cabin	2 mi SW Prairie du Rocher on Modoc Rd.	Excellent example
R-H-29	Log OUtbuilding	Center E½ 13-T5S-R9W	
R-H-31	Fort du Chartres Magazine	S end of Rt. 155 (NRHP)	

ELLIS GROVE VICINITY

R-H-37	Leavitt Farm	SE-29-T6S-R7W 1881	Built by son of early pioneer, A. Leavitt
R-H-38	Garrison Hill Cemetery & Memorial	NE-31-T6S-R7W 1892	Burials moved from Kaskaskia after flooding
R-H-39	Rierre Menard Home	SW-32-T6S-R7W (NRHP) 1802	Menard, important figure in early territory
R-H-40	Fort Kaskaskia (NRHP)		
R-H-41	Elias Kent Kane House	N-30-T6S-R7W	Kane, dominant figure in Ill. Constitutional Conv. in 1818, 1st senator
R-H-42	Reilly Lake (DEMOLISHED)		

KASKASKIA

R-H-43	Kaskaskia Church & Parsonage (NRHP)	
R-H-44	Kaskaskia Schoolhouse (NRHP)	
R-H-45	Kaskaskia Bell & Memorial (NRHP)	

CHESTER VICINITY

R-H-48	Chester Waterfront Stone Bldg	Ferry & Water	Last remaining bldg of old Chester waterfront
R-H-49	Landmark Tavern	Ferry & RR Tracks	Used as Marker for Chester landing

R-H-50	Cliff House	Ferry & Randolph	Old River hostelry
R-H-51	Rock House on Chester Bluff	Hancock & Randolph	Built with stones from old Presbyterian Ch.
R-H-52	Ruth Gilster Home	310 Buena Vista	1853
R-H-53	Chester Girls School	310 Buena Vista 1844	Altered & moved
R-H-54	Chester Boys School	310 Buean Vista 1844	Repository for court-house records when seat moved in 1844
R-H-56	Old Chester City Hall	603 Chestnut	Stone
R-H-57	Swanwick House	736 State	Swanwicks early settlers
R-H-58	Old Chester Fire Department	820 Swanwick	Stone
R-H-59	Chester Opera House	1003 State 1975	Associated with Elzie Seeger, cartoonist
R-H-60	Chinatown Stone House	Sfrieg Alley & German St.	Used as Brewery, stone arched cellar visible outside
R-H-61	John Schuchert House	1158 George 1870-75	*Owned & built Opera house*
R-H-62	Saddlery & Bakery	218 Buena Vista	Bakery was in E part of bldg.
R-H-64	Governor Schadrach Bond Memorial	Rt. 3 & Bridge Rd. 1888	First governor of Ill
ROCKWOOD			
R-H-65	Old Rockwood Flour Mill	E end of town by RR tracks	Went out of business when river changed course leaving Rockwood 2¼ miles away
R-H-66	Old Rockwood Slave House	Rt. 3 E of Leanderville Rd.	Reportedly stop on underground railway

St. Clair County

St-H-54	House	N. Side 3rd, W.of Elm	Early brick house

ST-H-55 (Cahokia Courthouse), ST-H-56 (Holy Family Church), ST-H-57 (Jarrott House) NRHP

CENTERVILLE

ST-H-58	LaLamiar House	W. Side Rt. 13, N. of Clartia Ave.	Early French family farm ca.1835

EAST ST. LOUIS

ST-H-59	Eads Bridge (See Missouri NRHP)		
St-H-60	St. Henry's Catholic Church	525 E Broadway 1873	
ST-H-61	Rock Junior Hisg	Bet. 9th & 10th St.	Massive stone school
ST-H-62	Maurice V. Joyce House	1005 Pennsylvania	Now E. St. Louis YWCA
ST-H-63	Gondillot House	7400 Bunkem Rd. 1800's	Small salt box with brick nogging
ST-H-64	Pensonneau-Calliot House	8105 Church 1818	Built in little French village by Laurent Pensoneau, son of builder of 1st St. Clair courthouse

CASEYVILLE

ST-H-67	Industrial Building	Pleasant Ridge Park 1854	2 story log house

CENTREVILLE

ST-H-69	House	NW19-1N-8W	Elaborate I House
ST-H-70	Eckert Farm	NW1-1S-8W 1879	On Turkey Hill Rd.
ST-H-71	Gay Houses	SW30-1N-7W 1840's	Late federal style houses built almost touching each other

Union County

DUTCH MILLS

U-H-35	Kornthal Church & Parsonage	NE13S-2W 1860	Built by Lutherans who immigrated from Austria in 1852, done in Austrian style

RURAL

U-H-37	Log Barn	SW11-13S-2W	2 story log barn

DONGOLA

U-H-42	Dongola Public School	NE cor. Oak & St. N of Charles	Square with cupola
U-H-44	House	NW cor. Davis & Mill	Possibly Hotel at one time
U-H-45	Mt. Zion Cumberland Presbyterian Church	NE13-13S-1E	Small frame decorated Church
U-H-46	Mt. Olive Baptist Church	SW27-13S-1E	Frame church with steeple
U-H-47	Poole Log Barn	NE-23-13S-1E	2 story log, tin roof

COBDEN

U-H-66	Bell Hill Ho8use	NE Edge of Town	
U-H-67	House	NE cor. Poplar & West	2 Story frame I house. With sandstone foundation except bay window on west added with brick later
U-H-68	Union Congregational Church	SE cor. Ash & Centennial	Stone with stained glass 1905
U-H-69	Old Feed Store	NW cor. W. R.R. St. & Ash	Oldest business bldg in Cobden
U-H-70	Old Livery Stable	SW cor. W. R.R. & Maple	Large frame, later used as gym
U-H-71	Old Cobden Mill ruins	NW cor. W. Church & W. R.R.St.	Stone boiler room still has intact walls.
U-H-72	Box Factory Office	E. Side Front, S. of 'B' St.	Hipped roof stone bldg. 1 story, Cobden was once home of extensive box industry

APPENDIX M - COMPUTER PROGRAM DESCRIPTIONS

Computer Programs

The following section lists the names of the programs which have been developed for the GREAT III data computer system. A listing of system program names is followed by program description and then by program operation procedures.

SYSTEM NAMES

(FSØ3Ø6Ø9)	EDIT PROGRAM.
(FSØ3Ø61Ø)	QSAM-GENERATE PROGRAM (Done once only).
(FSØ3Ø611)	UPDATE-DELETE-ADD PROGRAM.
(FSØ3Ø612)	RETRIEVAL PROGRAM.
(FSØ3KØØ1)	QSAM-MASTER FILE: For Sites.
(FSØ3KØØ2)	SEQUENCE-NUMBER FILE: Contains the highest sequence number of the sites from a county.
(FSØ3KØØ3)	EDITED CARD FILE: From (FSØ3CØØ1).
(FSØTEMP)	DISK-FILE OF UNEDITED CARD FILE: From sorted (FSØ3CØØ1) in (FSØ3Ø6Ø9). CHOSEN (FSØ3KØØ3) records in (FSØ3Ø612).
(FSØ3CØØ1)	SITE CARD FILE: Three per site.
(FSØ3CØØ2)	UPDATE-DELETE-ADD ACTION CARD FILE.
(FSØ3CØØ3)	STATE-COUNTY CODE CARD FILE.
(FSØ3CØØ4)	TOWNSHIP-RANGE CODE CARD FILE.
(FSØ3CØØW)	WRITE-REPORT CARD FILE: State-County and/or Township-Range Reports.

(FSØ3Ø6Ø9) EDIT PROGRAM

Program Description: Uses JCL-DECK (FSØ3T6ØØ9). (FSØ3Ø6ØO) is the first program to be used before any other programs to edit the SITE-CARD-FILE (FSØ3CØØ1). It prints out a 3 section report. The first report displays the position of the cards of (FSØ3CØØ1). The second report displays the sorted positions of the cards on the temporary File (FSØ3TEMP). The third report displays records after editing that passed correctly or failed with a description of the problem.

Program Operation Procedures: A missing record will cause just one error or a group print-out response. An invalid site-number in one record of a group will cause two missing-record errors but no invalid site-number error.

After all errors on SITE-CARD-FILE (FSØ3CØØ1) are corrected and after another run of (FSØ3T6Ø9) with the errors re-checked; do either the initial QSAM-GENERATE PROGRAM (FSØ3Ø611) or the normal UPDATE-DELETE-ADD PROGRAM (FSØ3Ø612).

(FSØ3Ø61Ø) QSAM-GENERATE PROGRAM (Done Once)

Program Description: Uses the JCL-DECK (FSØ3T61Ø) which is a TWO STEP JOB. This program initially creates two QSAM FILES: The MASTER DISK FILE (FSØ3KØØ1) and the STATE-COUNTY-SEQUENCE-NUMBER DISK FILE (FSØ3KØØ2).

Program Operating Procedures: (FSØ3KØØ1) MASTER DISK FILE Record contains:

1st) DELETE-CODE
1nd) STATE-COUNTY-SEQUENCE-NUMBER
3rd FSØ3CØØ1 - CARD - 1
4th) FSØ3CØØ2 - CARD - 2
5th) FSØ3CØØ3 - CARD - 3

(FSØ3KØØ2) DISK FILE-RECORD Contains:

1st) DELETE-CODE
2nd) STATE-COUNTY-CODE
3rd) HIGHEST-SEQUENCE NUMBER of SItes in County

Program (FSØ3Ø61Ø) still detects missing cards on the (FSØ3KØØ3) DISK FILE. (FSØ3T611) JCL uses (FSØ3Ø6Ø9) to create the (FSØ3KØØ3) DISK FILE from (FSØ3CØØ1) CARDS, then (FSØ3Ø611) reads (FSØ3KØØ3) DISK FILE to create the (FSØ3KØØ1) QSAM and MASTER-FILE (FSØ3KØØ2) QSAM Sequence Number-File.

MISSING-RECORDS-PROCEDURE: If records are missing on (FSØ3KØØ3) Edited-Cards-Disk-File:

1st) Take the three card groups out
2nd) Find the site-form
3rd) Replace the missing card(s)
4th) Run FSØ3T6Ø9 to Edit the cards
5th) Check for errors.

If no errors, run (FSØ3T611) JCL, with Corrected Card Deck.

(FSØ3Ø611) UPDATE-DELETE-ADD PROGRAM

Program Description: Uses JCL-DECK (FSØ3T611) which is a TWO STEP JOB. Program (FSØ3Ø611), after (FSØ3Ø6Ø9) EDITS the (FSØ3KØØ3) DISK-FILE, reads the (FSØ3KØØ3) DISK and one (FSØ3CØØ2) CARD for every three (FSØ3KØØ3) Records. Then depending on the Action-Code of (FSØ3CØØ2) Program (FSØ3Ø611): 1. ADDS a new record to the (FSØ3KØØ1) DISK-FILE and adds 1 to SEQUENCE-NUMBER of (FSØ3KØØ2); or 2. DELETES a record from the (FSØ3KØØ1) DISK-FILE; or 3. UPDATES a record on the (FSØ3KØØ1) DISK-FILE.

Program Operation Procedures: (FSØ3Ø611) still checks for missing (FSØ3KØØ3) records. If MISSING RECORDS errors happen repeat MISSING-RECORDS-PROCEDURE. Correct errors then run (FSØ3T611) JCL.

(FSØ3Ø612) RETRIEVAL PROGRAM

Program Description: Uses JCL-DECK (FSØ3T612). Program (FSØ3Ø612) will retrieve (FSØ3KØØ1) records by State-County cards on (FSØ3CØØ3) and/or by Township-Range cards on (FSØ3CØØ4).

Program (FSØ3Ø612) will produce a State-County report and/or a Township-Range of the State-County report depending on (FSØ3CØØW) Write-Report-Cards.

Program Operation Procedures:

(FSØ3CØØ3)	Column-- 1 2 3 4	For one county group
	Example 1 1 B K	of sites
	(State) (County)	

"11BK" is a State-County combination that will make accessible the entire group of sites of that State-County. If that State-County group exists? If there are not any (FSØ3CØØ3) cards, the job ends?

	Column-- 1 2 3 4 5 6 7 8	For one Township-Range
(FSØ3CØØW)	Example 2 3 N 1 1 E	group of sites.
	(Township) (Range)	

"23N11R" is a Township-Range combination that will make accessible the entire group of sites of that Township-Range-1 of (FSØ3KØØ1). If the Township-Range-1 of the record is blank the record group will be taken as valid? These can be 4 Township-Range combinations on 1 card (TS1^{V}RG1^{V}TS2^{V}RG2^{V}TS3^{V}RG3^{V}TS4^{V}RG4^{V}). 1 Township-Range combination per cards TS1^{V}RG1. Max Township Range-Cards = 2Ø

	Column-- 1 2 3 4 5 6 7 8 9 10 11 12 13	For Township-
(FSØ3CØØW)	Example T S R G W R I T E	Range Report.

"TS RG Write" is the one and only card needed to produce a report for all the (FSØ3CØØ4) cards. If missing there will not be any Township-Range reports.